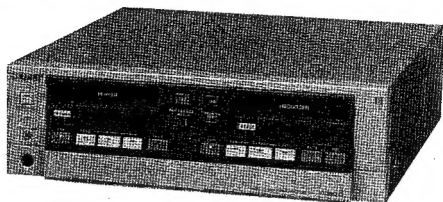


EVO-720P

RM-E720/KI-720P

SERVICE MANUAL

*AEP Model
UK Model*



SPECIFICATIONS

Video section

Video signal CCIR standards, PAL colour
Video recording system Rotary two-head helical scanning
Luminance signal recording system

Input FM
RECORDER VIDEO IN: BNC
connector (1)
1 Vp-p, 75 ohms, unbalanced,
sync negative

Output RECORDER/PLAYER/MONITOR
VIDEO OUT:
BNC connector (1 each)
1 Vp-p, 75 ohms, unbalanced,
sync negative

Horizontal resolution 240 lines (typical, SP mode)
Signal-to-noise ratio 45 dB (SP mode, colour)

Audio section

Audio recording system Rotary head, PCM 2-channel or
FM 1-channel system

Inputs RECORDER AUDIO IN: Phono
jack (2)
-10 dBs, more than 47 k ohms
MIC: Minijack (1), monaural
-60 dBs, 6.8 k ohms

Outputs RECORDER/PLAYER/MONITOR
AUDIO OUT: Phono jack (2 each)
-10 dBs, 47 k ohms
HEADPHONES: Stereo minijack (1)
-10 dBs, more than 10 k ohms

Dynamic range Standard track: more than 60 dB
(SP/LP)

Frequency response PCM track: more than 90 dB
Standard track: 30 - 15,000 Hz
(SP/LP)
PCM track: 20 - 15,000 Hz

General

Power requirements 220-240 V AC, 50/60 Hz
Power consumption 35W
Operating temperature 5°C to 40°C (41°F to 104°F)
Storage temperature -20°C to +60°C (-4°F to
+140°F)

Dimensions Approx. 355 x 116 x 380 mm
(w/h/d)
(14 x 4 5/8 x 15 inches)
Incl. projecting parts and
controls

Weight Approx. 8 kg (17 lb 10 oz)

Accessories supplied

Editing controller RM-E720 (1)
Title keyboard KI-720P (1)
Audio/video cable VMC-710M
(2 phono to 2 phono) (1)
Plug adaptor (BNC to phono) (1)
Pause control cord (mini to
mini) (1)
Plug adaptor (mini to mini-mini) (1)
Pause control cord with converter
(mini to 5-pin) (1)
Power cord (1)
Cleaning cassette V8-25CLN (1)

Design and specifications are subject to change without
notice.

8 VIDEO CASSETTE RECORDER
SONY®



Video/Audio Signals and Switch Settings

For picture and sound to be monitored

Picture	Sound	RECORDING INPUT SELECT	MONITORING AUDIO OUTPUT SELECT	PLAYER or RECORDER button as selector
Produce your own VTR	PCM track PCM and standard tracks Standard track	PLAYER or LINE	PCM MIX STD	PLAYER
Playback or recording error of RECORDER	PCM track PCM and standard tracks Standard track	PLAYER or LINE	PCM MIX STD	RECORDER
Input signal from an external equipment	Stereo Monaural	LINE	MIX STD	PLAYER

For sound to be recorded

Playback VTR	RECORDING INPUT SELECT	PLAYER or RECORDER button as selector	MONITORING AUDIO OUTPUT SELECT	Sound to be recorded (PCM or standard track)
PLAYER of the VTR	RECORDER of the VTR	PLAYER	PCM	PCM L track: Sound of PCM L track PCM R track: Sound of PCM R track Standard track: Sound of PCM L and R tracks
			MIX	PCM L track: Mixed sound of PCM L and standard tracks PCM R track: Mixed sound of PCM R and standard tracks Standard track: Mixed sound of PCM L, R, and standard tracks
			STD/STRAIGHT	PCM L track: Sound of PCM L track PCM R track: Sound of PCM R track Standard track: Sound of standard track
VTR connected to RECORDER AUDIO OUT jack	Any position		PCM	L channel: Sound of PCM L track R channel: Sound of PCM R track
			MIX	L channel: Mixed sound of PCM L track and standard track R channel: Mixed sound of PCM R track and standard track
			STD/STRAIGHT	L and R channels: Sound of standard track (monaural)
VTR connected to RECORDER AUDIO OUT jack	PLAYER		PCM	L and R channels: Mixed sound of PCM L track and PCM R track
			MIX	L and R channels: Mixed sound of PCM L track, PCM R track and standard track
			STD/STRAIGHT	L channel: Mixed sound of PCM L track and standard track R channel: Mixed sound of PCM R track and standard track
RECORDER of the VTR	VTR connected to RECORDER AUDIO OUT jack	Any position	Any position	L channel: Mixed sound of PCM L track and standard track R channel: Mixed sound of PCM R track and standard track
VTR connected to RECORDER AUDIO IN line	RECORDER of the VTR	LINE	Any position	PCM L track: L channel sound PCM R track: R channel sound Standard track: L and R channel sound (monaural)
	VTR connected to RECORDER AUDIO OUT line	LINE	Any position	L channel: L channel and monaural (L and R channel) sound R channel: R channel and monaural (L and R channel) sound

NOTE


When a tape with the same sound recorded on the PCM and standard tracks is played back on the RECORDER of this VTR, the mixed sound of the PCM and standard tracks is output. This is not a problem.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

- Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
- Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
- Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
- Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
- Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

EVO-720P

RM-E720/KI-720P

SONY SERVICE MANUAL

AEP Model
UK Model

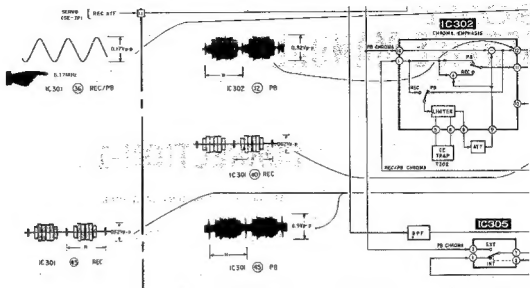
CORRECTION-1

Please correct your Service Manual.

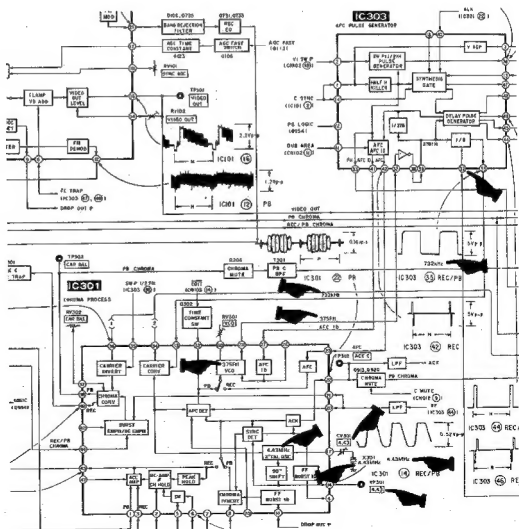


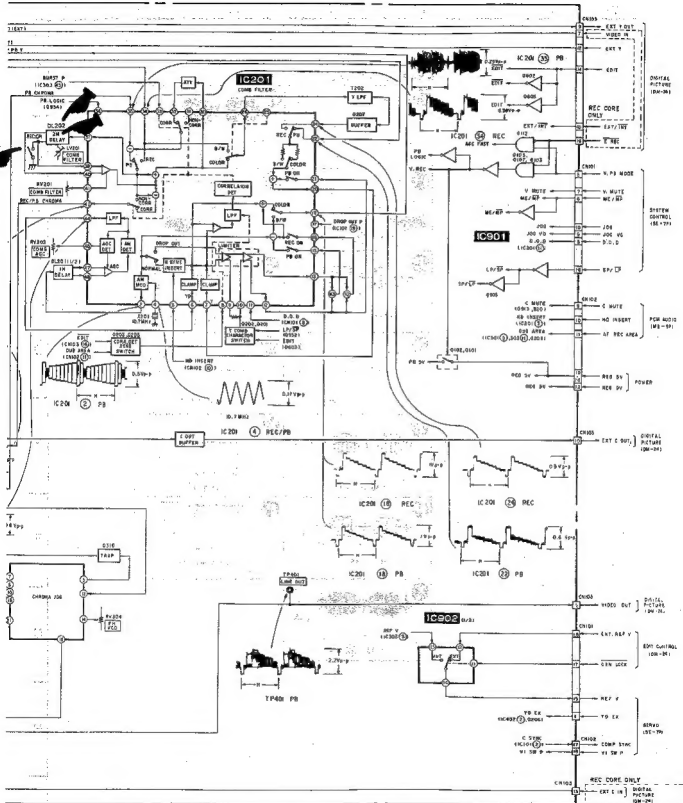
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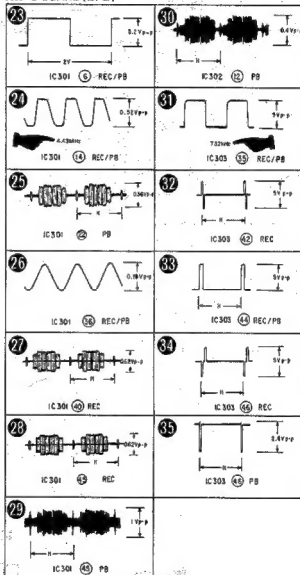
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25 26 27 28 29 30

HK-3 BOARD (2/2)



A

B

C

D

E

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PARTS ARRANGEMENT DIAGRAM FOR
ADJUSTMENT

RM-E720 (EDITING CONTROLLER)

KI-720P (TITLE KEYBOARD)

Precautions

On safety

- Before operating, check that the operating power voltage and frequency of the unit are identical with those of the power supply.
- Should any solid object or fluid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Under no circumstances should the unit be used as a stand for other equipment.
- The unit is not to be used in a place where the cord, plug or the cord is pulled out by the plug. Never pull the cord itself.
- The unit is not to be disconnected from the AC power supply while the unit is operating. If the unit is disconnected, even if the unit itself has been turned off.

On installation

- Allow adequate air circulation to prevent internal heat buildup. Do not place the unit on surfaces (rugs, carpets, blankets, etc.) or near materials (curtains, drapes) that may obstruct air circulation.
- Do not install the unit near heat sources such as radiators or air ducts or in a place subject to direct sunlight, excessive dust, mechanical vibration or other adverse conditions.
- The unit is designed for operation in a horizontal position. Do not install it in an inclined position.
- Keep the unit and cassette tapes away from moisture, dust, and other contaminants, such as a microwave oven or a large loudspeaker.
- Do not place any heavy object (more than 13 kg, 28 lb 10 oz) on the unit.

On operation

- When the unit is not in use, turn the power off to conserve energy and to extend its useful life.
- Remove and store video cassettes after recording or playback.

On cleaning

- Clean the cabinet, panel and controls with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution.
- Do not use any type of solvent, such as alcohol or benzene, which might damage the finish.

On recording

- Do not move away the cabinet and parking mechanism. They make an ideal container in which to transport the unit. When carrying the unit to another location, separate it as instructed on the carton.

On cassette care

- Store cassettes in their cases and keep them in an airtight container to prevent moisture of dust and internal winding.

If you have any questions about this unit, contact your Sony dealer.

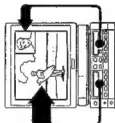
Outline

Features

The EVO-720P is an 8 mm compact editor for business users who require 8 mm format video editing in a single unit.

Picture-in-picture function

By connecting a color monitor to the MONITOR OUT terminal, the main and subsidiary video editing decisions can be displayed on the monitor screen simultaneously. The main and subsidiary pictures can be inverted by pressing one button.



Three editing methods

The following editing methods are available by using the editing controls on the panel.

Accessories	Quick editing	To edit one scene
Programme editing	To edit multiple programmes automatically by assigning such as the start and end of the editing order beforehand	
Simple insert editing	To replace a portion of the recorded tape with a new scene	

For further details, refer to "Tape editing methods" module with this unit" on page 6.

This section is extracted from instruction manual

SECTION 1 GENERAL

High picture quality editing

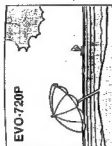
This unit handles the Y (luminance) signal and the C (chrominance) signal of the video signal separately. This reduces picture impairment in editing.

Digital freeze picture

One frame of the picture can be stored in the digital memory as a freeze picture. This is convenient for making a decision for a long time or making the picture stable when editing.

The insert function

The supplied title keyboard allows the creation of titles. The titles of the scenes of cassettes can be selected. The titles can be displayed on the monitor or freeze pictures or displayed on the black or transparent background.



Various scene modes

The JOG dial and SHUTTLE ring located on the editing controller allow frame-by-frame playback, variable speed playback (1/8, normal and 2 times normal speed), and still advance. The JOG dial has a normal speed in a forward direction and 1/8 and 1/2 times normal speed in a reverse direction in both forward and reverse directions, as well as freeze picture.

Tape Editing Methods Available with This Unit

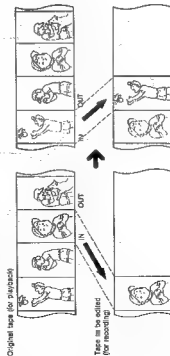
There are three editing methods. Simply press one button to start editing in any method, and the unit will make automatic corrections after each edit. Before editing, check the original tape contents carefully to select the necessary portions to be edited. Making a list of editing programmes is recommended.

To Edit Multiple Scenes in the Desired Order — ASSEMBLE EDITING

The assemble editing is useful for editing the desired scenes successively from the beginning of a new tape. There are two methods in assemble editing.

To edit scenes one by one — QUICK EDITING

Press the EDIT button to start editing and press the END button to stop editing while viewing the tape on which a new scene is to be edited. Edit the desired scenes one by one by repeating this procedure. For quick editing, the time code may not have been recorded on tape. For the time code, see Page 11.

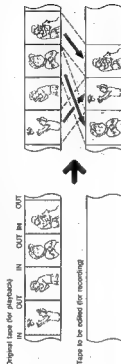


To edit scenes in the assigned order automatically — PROGRAMME EDITING

First assign the beginning (IN point) and the end (OUT point) of the scenes to be edited and the order of editing. This data are stored in memory. By pressing the EDIT button, editing of the assigned scenes is carried out automatically in the assigned order.

The scene to be edited is called a "programme". A freeze picture and title can be assigned as a programme as well as a motion picture.

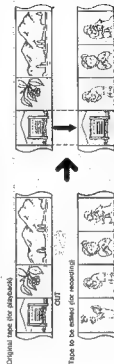
For programme editing, the time code should have been recorded on the original tape.



To Replace a Portion of Tape with a New Scene — SIMPLE INSERT EDITING

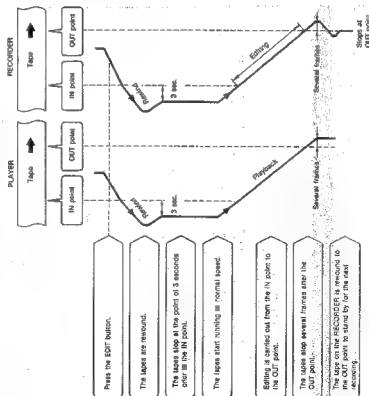
The simple insert editing is useful for replacing a portion of the recorded tape with a new scene and new sound. This is convenient when inserting a title.

First assign the start point (OUT point) of editing while viewing the tape on which the new scene is to be inserted and store the point in memory. Then record the tape and press the EDIT button to start editing. Editing will stop at the assigned point. For simple insert editing, the time code should have been recorded on the tape to be edited.



What is a Preview?

"Preview" is a method designed to run the original tape and the tape to be edited for several seconds (3 seconds) to this unit before the point editing during point editing. This method is designed to provide a preview of the original tape under conditions, thus making possible highly accurate editing.



Noise

- During preview, the tape start running and stop automatically.
- The period requires of period is 3 seconds for this unit.
- The accuracy of the preview is within 3 seconds from the beginning of the original tape. This period is not affected by the length of the tape. The preview is carried out for 3 seconds will be made at the beginning of the edited tape.

What is a Time Code?

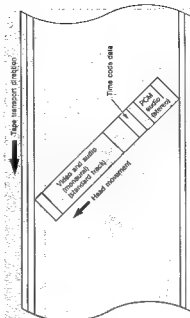
Each frame recorded on a tape can be numbered in units of frame (1/25 second) by the hour, minute, second and frame. This is a time code. The time code is automatically recorded during editing, or it can be recorded separately. Programme editing and simple insert editing are carried out by using the recorded time code.

Note

The time code used in this unit is the special 8 mm format time code for EVO-220P. It consists of hours, minutes, seconds, and frames data.

Format of 8 mm Video Cassette Tape

The video and audio information are recorded on an 8 mm video cassette tape according to the following allocation. This unit allows recording of the time code as well as other information.

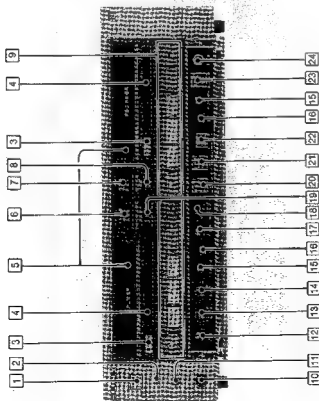


Recording time, playback time, and still recording time are recorded on the tape. During playback, the mode in which the tape was recorded is selected automatically.

Cassette used	SP mode	LP mode
PS-30	30 min.	1 hr.
PS-60	1 hr.	2 hr.
PS-90	1 hr. 30 min.	3 hr.

Location and Function of Controls

Front



1 POWER switch and indicator

2 STANDBY indicator

When the AC power cord is plugged in, this indicator lights up. When the POWER switch is turned on, the indicator goes off.

3 A SELECT button

Press to eject the cassette.

4 INDICATORS

COMPARTMENT

PCMC Lights when PCM track is recorded on the tape. When the POWER switch is turned on, the indicator goes off.

5 A SELECT button

Press to eject the cassette.

6 CASSETTE COMPARTMENT

The left one is for the PLAYER deck, and the right one is for the RECORDER deck.

7 EJECT button and indicator

Press to start quick ejection, sample insert ejection or program ejection. The indicator blinks during program ejection, and it lights during ejection.

8 EJECT button

Press to stop quick ejection, sample insert ejection or program ejection. The indicator blinks during program ejection, and it lights during ejection.

9 COUNTER RESET button

Press to reset the tape counter displayed on the main picture to 0000.

10 TAPE TRANSPORT buttons and indicators

When the button is in operation, the indicator lights up.

11 STOP button

Press to stop the tape.

12 PLAY button

Press to start the tape.

13 FAST-FORWARD button

Press to fast-forward the tape.

14 REWIND button

Press to rewind the tape.

15 REC button (RECORDER section only)

Press to start recording.

16 CONTROLLER OVERSEER

Connect the supplied editing controller head.

17 HEADPHONE jack (video output)

Connect the headphones.

18 PHONE LEVEL control

Adjust the sound level.

19 MONITOR AUDIO OUTPUT SELECT switch

Select the sound to be output to the headphones and the monitor.

20 PCM for the sound on the PCM track

MIX for the sound on the PCM track and standard track mixed

STD for the sound on the standard track

21 PLAYER AUDIO OUTPUT SELECT switch

Select the sound of tape inserted into the PLAYER to be output to the RECORDER and the PLAYER OUT.

22 PCM for the sound on the PCM track

MIX for the sound on the PCM track and standard track mixed

STD for the sound on the standard track

23 STEREO/LEFT/RIGHT switch

In this position, the sounds recorded on the PCM and standard tracks are output to the RECORDER and the PLAYER OUT.

24 MONITOR AUDIO OUTPUT SELECT switch

Select the sound to be output to the headphones and the monitor.

25 PCM for the sound on the PCM track

MIX for the sound on the PCM track and standard track mixed

STD for the sound on the standard track

26 ADJUST (downward picture adjustment) knob

Normally keep this knob at the center (slant) position. When the picture is distorted during reproduction, adjust this knob.

15 PFS (Picture Free Select) button and indicator

Normally, keep the indicator off. If the indicator is lit, the picture is recorded on other tracks. When the PFS button is pressed, the indicator is lit. When the PFS button is pressed again, the indicator is lit. When the PFS button is pressed again, the indicator is lit.

16 DATA SCREEN switch

The time code, editing data, tape counter, etc. can be displayed on the monitor screen together with a picture. To display such data, set the switch to ON. To turn off the display, set it to OFF.

17 RECORDER INPUT SELECT switch

Select the recording source for the RECORDER. The indicator on the left is for the PLAYER. The indicator on the right is for the RECORDER. When the RECORDER is in use, the indicator on the right is lit.

18 6 MIN TIME CODE WRITE switch and indicator

Press to start 6 min time code writing. The indicator on the left is for the PLAYER. The indicator on the right is for the RECORDER. When the 6 min time code writing is in progress, the indicator on the left is lit. When the 6 min time code writing is completed, the indicator on the left is lit. When the 6 min time code writing is completed, the indicator on the left is lit.

19 EDITING DATA LOAD button and indicator

Press to load the editing data saved on the tape. The indicator on the left is for the PLAYER. The indicator on the right is for the RECORDER. When the editing data is loaded, the indicator on the left is lit. When the editing data is loaded, the indicator on the left is lit.

20 EDITING DATA SAVE button and indicator

Press to save the editing data. The indicator on the left is for the PLAYER. The indicator on the right is for the RECORDER. When the editing data is saved, the indicator on the left is lit. When the editing data is saved, the indicator on the left is lit.

21 EDITING DATA ALL CLEAR button

Press to clear all editing data stored in the memory of this unit.

22 AUDIO DUB button and indicator

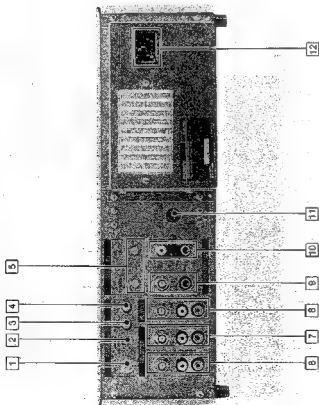
Press to start audio recording on the PCM track of the tape in the RECORDER. The indicator on the left is for the PLAYER. The indicator on the right is for the RECORDER. When the audio recording is in progress, the indicator on the right is lit. When the audio recording is in progress, the indicator on the right is lit.

23 MIC Jack Indicator (standby)

The indicator on the left is for the PLAYER. The indicator on the right is for the RECORDER. When the microphone is connected, the indicator on the right is lit. When the microphone is connected, the indicator on the right is lit.

Location and Function of Controls

Rear



1 PAUSE OUT jack (top left)
Connect this jack to the CONTROL 1 jack on the current pause jack of the VTR connected to the PLAYER OUT jacks for automatic editing operations.

2 MODE SELECT switch
When a VTR is connected to the PAUSE OUT jack, select the pause control mode of the VTR with this switch. See page 34.

3 STILL ADJ (still picture adjustment knob)
When editing onto the VTR connected to the PLAYER OUT jacks, turn this knob so that editing starts exactly at the IN point specified on the PLAYER.

4 OUT POINT ADJ (out point adjustment knob)
When editing onto the VTR connected to the PLAYER OUT jacks, turn this knob so that editing stops exactly at the OUT point specified on the PLAYER.

5 STILL ADJ (still picture adjustment knob)
When the tape picture appears to flicker, turn these REORDERER screws in for the tape in the REORDERER, and the PLAYER screw for the tape in the PLAYER.

Note

The picture may not become stable completely by adjusting these screws. This is not a failure of the unit.

6 RECORDER IN jacks
VIDEO: BMC connector, AUDIO: 2 phono jacks, stereo
Input the video and audio signals to be recorded on the REORDERER.

7 RECORDER OUT jacks
VIDEO: BMC connector, AUDIO: 2 phono jacks, stereo
The video and audio signals being played back of the REORDERER are output here.

8 PLAYER OUT jacks

VIDEO: BMC connector, AUDIO: 2 phono jacks, stereo
The video and audio signals being played back on the REORDERER are output here to the PLAYER OUT jacks with the PLAYER AUDIO OUTPUT SELECT switch.

9 MONITOR OUT jacks

VIDEO: BMC connector, AUDIO: phono jack, monaural
Connect the colour monitor equipped with the BMC type video input connector and the monochrome audio input jack to these jacks. The picture-in-picture function is possible on the screen of the monitor. The picture-in-picture function is possible on the screen of the monitor. The picture-in-picture function is possible on the screen of the monitor. The picture-in-picture function is possible on the screen of the monitor.

10 MONITOR OUT jacks

VIDEO: phono jack, AUDIO: phono jack
Connect the colour monitor equipped with the phono-type video and audio input jacks. By connecting the colour monitor, the picture-in-picture function of the TV not equipped with the video and audio input jacks can be used as a monitor.

11 TITLE REORDERER connector (RIN DIN)

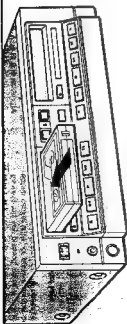
Connect the supplied title reorderer.


12 AC IN (AC inlet)

Connect the supplied power cord.

The signal output from each output jack is determined by the positions of the switches on the front panel. Refer to "Video/audio signals and system settings" on page 66.

Basic System Connection



- 1 Turn on the VTR.
- 2 Insert a cassette into the cassette compartment. The cassette will be loaded automatically and the  indicator will light. The unit will be set to the freeze picture mode.



To Elect the Cassette

Press the EJECT button.
The cassette will be ejected automatically.

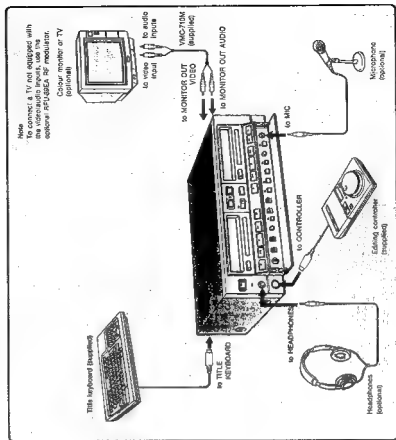
For inserting or ejecting the cassette inserting and ejecting the cassette are possible when the power cable is connected to an AC outlet (the indicator lights), even if the VTR is not turned on.

fluctuations in the

When a recording is made on a cassette, any previous material will be automatically erased. To protect a cassette from accidental erasure, slide the tab on the rear of the cassette to the left, so that the tab window is red.

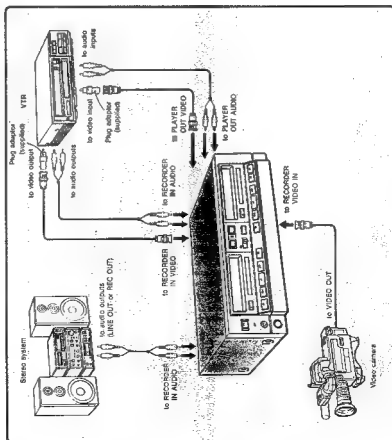


Table window test:	Table in original position:
 recording not possible.	 recording possible.



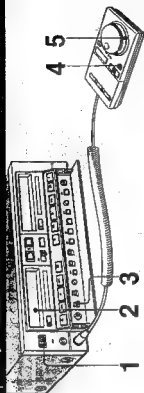
Connection of External Equipment

When recording from a video camera, another VTR, stereo system, etc., connect the required equipment using the appropriate connecting cord, in addition to the basic system connection.



Playback

Normal Playback on the PLAYER



1 Turn on the VTR and the colour monitor.

2 Insert a cassette into the PLAYER.

The unit will be set to the fastest picture mode.

3 Select the sound to be heard with the MONITOR AUDIO OUTPUT SELECT switch.

MONITOR AUDIO OUTPUT SELECT switch	Sounds to be heard
PCM	Sound on the PCM track
MX	Mixed sound on the PCM and standard tracks
STD	Sound on the standard track

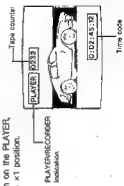
For details, refer to "Video/audio signals and switch settings" on page 65.

4 Press the PLAYER button on the controller.

Make sure that the PLAYER indicator is lit.

5 Press the II PAUSE button or the ► PLAY button on the PLAYER, or turn the SHUTTLE ring on the controller to the «1» position.

Playback will begin.



To play back the tape on the RECORDER

- 1 Insert a cassette into the RECORDER.
- 2 Press the REVERSE button on the controller.
- 3 Press the II PAUSE or the ► PLAY button on the RECORDER.

The other playback procedure is the same as the playback on the PLAYER.

To turn off the subsidiary picture on the monitor screen and to return to the normal picture mode, press the P button on the picture-picture mode, press the P button again.

To turn off the tape counter and time code display, Set the DATA SCREEN switch on the front panel to OFF.

To stop playback

Press the ■ STOP button. When the tape reaches its end during playback, it will be returned to the beginning. When playback was started with the SHUTTLE ring, however, the tape will not be rewound.

To stop playback immediately (freeze picture)

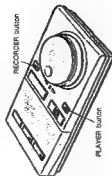
Press the II PAUSE button, or reset the SHUTTLE ring. To resume playback, press the II PAUSE button again, press the ► PLAY button, or turn the SHUTTLE ring to 1 position. When you reset the SHUTTLE ring, the tape is automatically advanced by one frame if the pause mode lasts for 7 minutes and the pause mode will then be resumed. This operation can be repeated for one hour, and the tape will be automatically set to stop mode.

Various Playback Modes

Various playback modes will be obtained by using the JOG dial and SHUTTLE ring on the controller.

Using the JOG dial

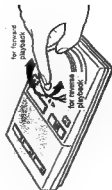
- 1 Press the PLAYER or RECORDER button according to the dock to be used for playback.



- 2 Play back a tape and set the VTR to the freeze picture mode.

- 3 Turn the JOG dial clockwise for forward playback, and counterclockwise for reverse playback.

The tape will be played back at the speed according to the speed you are turning the JOG dial. See table below.



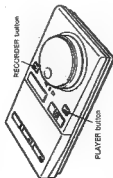
- 4 When you stop turning the JOG dial, the picture will freeze again.

When the JOG dial is in use, the JIS indicator on the VTR and the indicators on the tape transport buttons light.

Playback speed obtained with JOG dial	Indicator of the tape transport buttons
Forward	Reverse
0 → 1/2 (play)	1/2 and 1/4 light
1/2 (normal)	1/2 (normal)
2 (fast)	2 (fast)

Using the SHUTTLE ring

- 1 Press the **PLAYER** or **RECORDER** button according to the deck to be used for playback.



- 2 Turn the **SHUTTLE** ring in the position where the desired playback speed is obtained clockwise for forward playback, and counterclockwise for reverse playback.
See table below.



- 3 To freeze the picture, reset the **SHUTTLE** ring to the center position.

Notes

- If a lock (transport) button is pressed on the VTR, the **SHUTTLE** ring will be released, and the **SHUTTLE** ring will be released.
- To protect the tape, the unit will be automatically set to stop when more than 10 minutes of reverse playback has been performed.
- In $\times 15$ high-speed or $\times 13$ high-speed mode, the vertical sync may be distorted depending on the program.

When the **SHUTTLE** ring is in use, the **STOP** indicator on the VTR and the indicators for the tape transport function lights.

Playback speed obtained with SHUTTLE ring		Indications on the VTR
Forward	Reverse	SHUTTLE ring
$\times 15$ (slow)	$\times 15$ (slow)	FF and \blacktriangle light.
$\times 1$ (normal)	$\times 1$ (normal)	\blacktriangle light.
$\times 2$ (normal)	$\times 2$ (normal)	\blacktriangle light.
$\times 3$ (normal)	$\times 3$ (normal)	\blacktriangle light.
$\times 4$ (normal)	$\times 4$ (normal)	\blacktriangle light.
$\times 5$ (normal)	$\times 5$ (normal)	\blacktriangle light.
$\times 10$ (normal)	$\times 10$ (normal)	\blacktriangle light.
$\times 15$ (high-speed)	$\times 15$ (high-speed)	\blacktriangle light.
$\times 13$ (high-speed)	$\times 13$ (high-speed)	\blacktriangle light.

Using the \blacktriangle , FF, and \blacktriangle buttons on the VTR

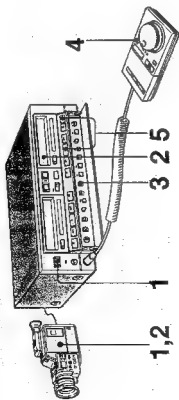
- 1 Press the \blacktriangle **PLAY** button to play back a tape.
- 2 Press the \blacktriangle **FF** in \blacktriangle **REW** button.
 \blacktriangle for cutting
 \blacktriangle for rewinding



- 3 When you release the button, the playback will be resumed.

Recording

Connect a recording source, such as a video camera, referring to the connection diagram on page 20.



- 1 Turn on the VTR, colour monitor and video camera.
- 2 Insert a cassette into the RECORDER and prepare the video camera for shooting.
- 3 Set the RECORDER INPUT SELECT switch to LINE.
- 4 Press the RECORDER button on the controller.
- 5 While pressing the **REC** button, press the **PLAY** button. Recording will begin.

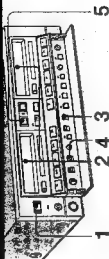
Notes

Recording will be done in SP mode only. Recording in LP mode cannot be done with this VTR.

To stop recording Press the **STOP** button on the RECORDER. When the tape reaches its end during recording, it will be automatically rewound to the beginning and the unit will be set to stop mode.

Tape Dubbing

To Dub from PLAYER to RECORDER on this VTR



- 1 Turn on the VTR and colour monitor.
- 2 Insert the original tape cassette into the PLAYER and a cassette for dubbing into the RECORDER.
- 3 Set the RECORDER INPUT SELECT switch to PLAYER.
- 4 Select the sound to be dubbed with the PLAYER AUDIO OUTPUT SELECT switch.
See "Video/audio signals and switch settings" on page 66.
- 5 Press the EDIT button on the VTR or on the controller.

Notes

• Dubbing cannot be done when the speed selection (sp) button on the cassette is turned into the RECORDER (ie. red) or with certain commercially available cassette having a record prevention system. If such a cassette is operated automatically with the EDIT button is pressed.
• During the tape dubbing, the two docks will stop when recording will be done in SP mode only. Recording in LP mode cannot be done with this VTR.

To stop dubbing

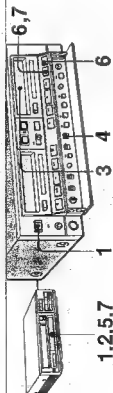
Press the END button on the VTR or on the controller.

Tape Dubbing

To Dub from an External VTR

By connecting another VTR to the RECORDER IN jacks, you can dub a tape of Beta format or other video format to any 4 mm format tape.

For connection, see page 55.



- 1 Turn on the VTRs and colour monitor.
- 2 Preview the other VTR for playback of the original tape.
- 3 Insert a cassette for dubbing into the RECORDER. The RECORDER will be automatically set to the freeze picture mode.
- 4 Set the RECORDER INPUT SELECT switch to LINE.
- 5 Play back the original tape on the other VTR, and then press the II PAUSE button of the other VTR.
- 6 Press the REC button on the RECORDER to set it to the REC freeze picture mode.
- 7 Press the II PAUSE button of the other VTR and the RECORDER at the same time to start dubbing.

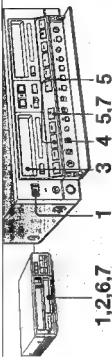
To remove the picture and sound of the external VTR to the recorder during dubbing, stop the tape on the other VTR. When the tape reaches its end during dubbing on the recorder, the picture and sound will be automatically removed to the beginning and will stop.

To stop dubbing, press the II PAUSE button on the RECORDER and then the STOP button on the other VTR. When the tape reaches its end during dubbing on the recorder, the picture and sound will be automatically removed to the beginning and will stop.

To Use as an External VTR

By connecting another VTR to the RECORDER OUT jacks, you can dub 8 mm format tape to a tape of Beta format or other video format.

For connection, see page 55.



- 1 Turn on the VTRs and colour monitor.
- 2 Preview the other VTR for recording.
- 3 Insert the original tape cassette into the PLAYER.
- 4 Select the sound to be dubbed with the PLAYER AUDIO OUTPUT SELECT switch. For details, refer to "Video/audio signals and switch settings" on page 55.
- 5 Set the PLAYER to the freeze picture mode at the beginning of the scene to be dubbed.
- 6 Start recording on the other VTR, then press the pause button of the VTR.
- 7 Press the II PAUSE buttons of the other VTR and the PLAYER at the same time to start dubbing.

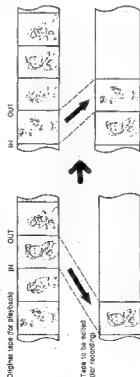
To stop dubbing, press the II PAUSE button on the other VTR, and press the II STOP button on the PLAYER. When the tape reaches its end on the PLAYER during dubbing, the picture and sound will be automatically removed to the beginning and will stop.

To dub from the RECORDER to the external VTR, the sound recorded on the PCM track and its standard track of the original tape are mixed and output from each channel of the RECORDER OUT AUDIO jacks.

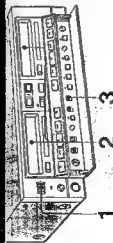
Quick Editing — To Edit Scenes One by One

What is quick editing?

Quick editing is used to editing desired scenes one by one.
To start editing, locate the beginning of the scene (in point) of editing by observing the playback of the original tape and press the EDIT button. To stop editing, press the END button when the desired ending scene (OUT point) is played back. Fastore editing, preview is performed automatically.
* For the sound to be edited, refer to "Video/audio signals and switch settings" on page 88.



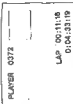
Preparation



- 1 Turn on the VTR and colour monitor.
- 2 Insert the original tape cassette into the PLAYER, and a cassette for editing into the RECORDER.
- 3 Set the RECORDER INPUT SELECT switch to PLAYER.

To Edit

- 1 Press the RECORDER button, and play back the tape for editing on the RECORDER.
- 2 Locate the point of tape where the editing is to start using the JOG dial and SHUTTLE ring, and set the RECORDER to the freeze picture mode.
- 3 Press the PLAYER button, and play back the original tape on the PLAYER.
- 4 Locate the beginning of the scene you want to edit using the JOG dial and SHUTTLE ring, and set the PLAYER to the freeze picture mode. If the picture of the RECORDER is not displayed as the subsidiary picture, press the P or B button.
- 5 Press the EXIT button.
Preview will begin, and then editing will begin.
The duration of the programme (LAP time) will be displayed on the screen.
To freeze a desired playback scene during editing, press the FREEZE button. The freeze source will be edited. (Press the FREEZE button 4 times, and correct scene picture during the editing.)
- 6 At the desired ending point, press the END button.
Both the PLAYER and RECORDER will be set to the freeze picture mode.
The first scene programming is now edited. For other programmes, repeat steps 4 through 6.



To select a subsidiary picture during quick editing, connect a microphone to the MIC jack. When the indicator of the REC button is lit, the sound picture is from the microphone. Press the MIC button to switch the picture from the original tape to the microphone. Press the MIC button again to return to the original tape picture. Press the MIC button on page 88 concerning audio editing and sound editing.

Notes

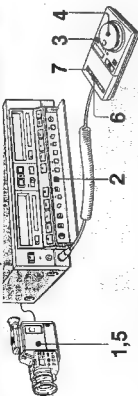
- * When you do not use the point where the editing is to start, the steps 1 through 3 are unnecessary.
- * The JOG dial and SHUTTLE ring have the same function as those on the controller.
- * The JOG dial SHUTTLE ring and SHUTTLE ring have the same function as those on the controller.
- * When about 5 seconds, then perform the real operation.
- * The RECORDER INPUT SELECT switch is set to PLAYER with a still, never-magnified can also be edited using the quick editing method. See "To edit a freeze picture" on page 20 or "To edit a freeze picture" on page 24.

Check the indicators	EDIT indicator on the tape transport buttons	on the VTR	on the RECORDER	on the RECORDER
Daily preview	Black	Black	Black	Black
During editing	Light	Light	Light	Light
When copying ends	Turns off	Turns off	Turns off	Turns off

Quick Editing

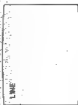
Quick Editing from a Video Camera or Other VTR

Connect a video camera or another VTR to the RECORDER IN jacks.



1 Prepare the video camera for shooting, or the other VTR for playback of the original tape.

2 Set the RECORDER INPUT SELECT switch to LINE.
The "LINE" indication will be displayed on the screen.



3 Press the RECORDER button and play back a tape for editing on the RECORDER.

4 Locate the point on tape where editing is to start, and set the RECORDER to the freeze picture mode.

5 Start shooting on the video camera, or start playback on the other VTR.

6 Press the EDIT button.

Preview and final editing will begin.

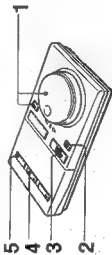
7 To stop editing, press the END button.

To delete the picture of the video camera or the other VTR as the main picture:

Press the PLAY button on the monitor screen and the picture on the monitor screen will freeze. By pressing the FREEZE button on the monitor screen, the picture will be recorded on the RECORDER. As the original VTR continues playback, the playback sound is recorded together with the freeze picture.

To Edit a Freeze Picture

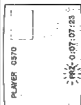
This VTR can store one frame of the picture in memory, and use the stored picture as a freeze-picture for editing.



1 Press the RECORDER button, locate the point of tape where the editing is to start, and set the RECORDER to the freeze picture mode.

2 Press the PLAYER button, locate the scene to be edited as a freeze picture, and set the PLAYER to the freeze picture mode.

3 Press the FREEZE button.
The "FRZ" indication will start.



4 Press the EDIT button.

Preview will begin. When the preview is completed, the picture on the screen will freeze and editing of the freeze picture will begin.

5 When the desired period of time has elapsed, press the END button to stop editing.

Notes

1. When a VTR continues playback during freeze editing, the picture on the monitor screen will freeze. By pressing the FREEZE button on the monitor screen, the picture will be recorded on the RECORDER. As the original VTR continues playback, the playback sound is recorded together with the freeze picture.

2. By connecting a microphone to the MIC jack, a comment can be recorded on the MIC track. The comment will be recorded together with the original tape sound and picture.

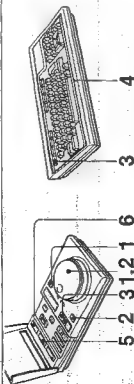
3. On the MIC track, only the microphone sound will be recorded.

To cancel editing of the freeze picture:
Before pressing the EDIT button, press the FREEZE button to turn off the "FRZ" indication.

To Edit a Title

By connecting the supplied title keyboard, you can create a title using alphabet, numerals and several symbols. The title can be recorded as an editing programme with a black background, or superimposed onto the picture being edited. For connection of the title keyboard, see page 61.

To superimpose a title onto the picture being edited



- 1 Press the REORDER button, locate the point of tape where the editing is to start, and set the REORDER to the freeze picture mode.
- 2 Press the PLAYER button, locate the scene on which you want to superimpose a title, and set the PLAYER to the freeze picture mode.
 - * If you want to set the scene as a freeze picture, press the FREEZE button.

- 3 Press the TITLE button on the controller or on the title keyboard.

The cursor will blink on the monitor screen.
The subsidiary picture will disappear automatically.

- 4 Create a title using the title keyboard.

For details on the use of the keyboard, see page 61.

- 5 Press the EDIT button.

Pencil will begin. When the pencil is completed, the picture and sound will be edited with the title.

- 6 At the desired ending point of the editing, press the END button.

To superimpose the title only on the desired portion of

editing
1 After pressing the EDIT button in step 5, press the TITLE button. The cursor will blink on the monitor screen. The subsidiary picture will disappear automatically.

2 At the point where you want to superimpose the title, press the TITLE button. The title will appear and be superimposed on the picture.

By pressing the TITLE button during editing, you can turn the title on and off at the desired point.

To edit a title frame with a black background

- 1 Press the REORDER button, locate the point of tape where the editing is to start, and set the REORDER to the freeze picture mode.

- 2 Press the PLAYER button.

- 3 Press the TITLE button.

The cursor will blink on the monitor screen.
The subsidiary picture will disappear automatically.

- 4 Press the BLACK key on the title keyboard and create a title using the title keyboard.

For details on the use of the keyboard, see page 61.

- 5 Press the EDIT button.

Pencil will begin. When the pencil is completed, the title frame created will be edited.

- 6 At the desired ending point of the editing, press the END button.

Notes

- * When the REORDER INPUT SELECT switch is set to LINE, the title cannot be recorded on the REORDER. The title can be recorded on the REORDER when the switch is set to VIDEO.
- * While editing a title frame, the other sounds cannot be recorded.
- * Title frames cannot be turned off and on during editing.

Programme Editing – To Edit Scenes in Succession

What Is Programme Editing?

Programme editing is used for editing the assigned scenes automatically in succession. First assign the starting point of editing (IN point) and the ending point of editing (OUT point) of each scene by observing the original tape, and store this data in memory. Press the EDIT button to start editing, and the assigned scenes will be edited automatically.

For programme editing, the time code should have been recorded on the original tape.

Original tape for playback



Notes

- During programme editing, the scenes at the IN point of a programme will continue the scenes at the OUT point of the previous programme. Therefore, the edited programme ends one frame before the assigned OUT point.
- The time code of the original tape must be recorded on the original tape and switch settings* on page 65.
- *The IN point or OUT point cannot be stored in memory at the following points of time:
 - When the time code is 00:00:00 and 00:00:10
 - Advance the tape slightly
 - Where the time code is illegible due to noise or tape damage

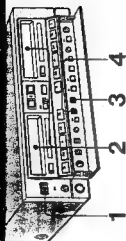
Check on the monitor screen

In the programme editing mode, the following indications will appear on the monitor screen.



When the picture-in-picture function is activated, the main picture is of the PLAYER.

Preparation

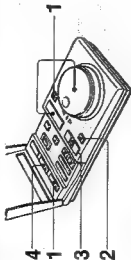


- 1 Turn on the VTR and colour monitor.
- 2 Insert the original tape cassette into the PLAYER, and a cassette for editing into the RECORDER.
- 3 Set the RECORDER INPUT SELECT switch to PLAYER.
- 4 Set the DATA SCREEN switch to ON.

Programme Editing

To Edit Part of the Assigned Programmes

You can start editing with the programme of the desired number and perform editing to the last programme.



1 Proceed steps 1 to 6 of "To Edit" on page 11 to assign the programmes and prepare the PLAYER and RECORDER for editing.

2 Press the PLAYER button.

3 Press the "M" or "A" button on the controller to select the programme number from which you want to start editing.

PLAYER 0336	
IN	0:04:05.00
LAP	00:03:05
TOTAL	0:00:04:20
PMO02	0:04:05.00

4 Press the EDIT button.

Pre-set will begin, and then editing from the selected programme to the last programme will be carried out.

When the editing is completed, both the PLAYER and RECORDER will be set to the freeze picture mode.

Notes

- If a programme number with no programme data stored is selected for the first programme, the programme editing will not be performed.
- If all the programme data for the selected programme number and last have been deleted with the ONE-PCN CLEAR button, the programme editing mode will be specified automatically when the EDIT button is pressed.

To Assign a Freeze Picture as a Programme

This VCR can store one frame of the picture in memory. The stored freeze picture can be used as an editing programme.

1 Proceed steps 1 and 2 on page 38 to locate the scene to be edited as a freeze picture, and set the PLAYER to the freeze picture mode.

2 Press the FREEZE button on the controller. The "FPC" indication will blink.

PLAYER 0313	
FPC	0:03:02:08
LAP	00:03:00
TOTAL	0:00:03:00
PMO03	0:03:02:08

3 Press the ENTRY button.

The freeze picture is now stored in memory as a programme for 3 seconds.

PLAYER 0313	
FPC	0:03:02:08
TOTAL	0:00:03:03
PMO03	0:03:02:08

To edit the same freeze picture for more than 3 seconds, Press the FREEZE button again and press the ENTRY button. The same freeze picture is assigned to the next programme.

Repeat this procedure as many times as you want.

Notes

During editing of a freeze picture, the freeze picture is displayed on the above screen. So the subsidiary picture disappears from the screen.

To change the freeze picture to be edited

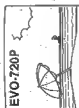
- Follow the steps of the ENTRY button.
- Change the scene with the JOG dial, SHUTTLE ring, etc. Then making sure that the "FPC" indication is blinking.
- When the ENTRY button has been pressed:
- Press the "M" button on the controller repeatedly so that the programme number of the freeze picture to be edited is assigned appears on the monitor screen.
- Press the ONE-PCN CLEAR button to erase the data in memory.
- Assign a new freeze picture.

To Assign a Title as a Programme

By connecting the selected title keyboard, you can create a title using the alphabet, numerals and special characters. The title can be recorded as an editing programme with a black background, as well as the title superimposed onto the picture being edited. For connection of the title keyboard, see page 61.

To superimpose a title while editing a motion or freeze picture

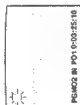
During programme assignment for programme editing (when the indicator of the PICTURE MODE button lights), proceed as follows:



- 1 Proceed steps 1 and 2 on page 38 to locate the scene on which you want to superimpose a title, and set the PLAYER to the freeze picture mode.

- 2 Press the TITLE button.

The subsidiary picture will disappear.
The cursor will blink on the monitor screen.



- 3 Create a title using the title keyboard.

- For details on the use of the keyboard, see page 61.
- If you want to edit the scene as a freeze picture, press the FREEZE button.



- 4 Press the ENTRY button to store the IN point in memory.

- 5 Locate the CUT point and press the ENTRY button.

When you edit the scene as a freeze picture, this step is unnecessary.

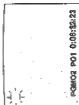
To edit a title frame with a black background

This VTR can store one title frame (title with a black background) in memory, and use it as an editing programme.

- 1 Press the PLAYER button.

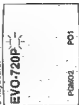
- 2 Press the TITLE button.

The subsidiary picture will disappear.
The cursor will blink on the monitor screen.



- 3 Press the BLACK key on the title keyboard and create a title using the keyboard.

For details on the use of the keyboard, see page 61.



- 4 Press the ENTRY button.

The title frame is now stored in memory as a programme for 3 seconds.

To edit the same title frame for more than 3 seconds:

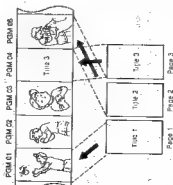
- Press the TITLE button again, press the TITLE PAGE button on the keyboard to call the same title frame and press the ENTRY button.
- Press the same key assigned to the next programme number for another 3-second programme.
- Repeat this procedure as many times as required.

Note

Only the sound from the microphone can be recorded while editing a title frame. The other sounds cannot be recorded.

To Create Titles Independently

Titles of up to 30 spaces can be created in a lump and stored in memory, independently of scene assignment. Each title page can be assigned to the desired programme number. While the programme editing is in progress, the titles are coded as the assigned programme.



1 Assign the page for which a programme with a title is to be created.

See "To superimpose a title while acting a motion picture" on page 45. When the programme is in the "GO TO" position, press the "GO TO" button on the controller. Follow at the step except typing a title. A blank title page is created.

Repeat by a, the other desired scenes (up to 30).

Note

Each time the blank title page is created, the displayed page number increases by one. Automatically, the page number is a particular programme number, and the "GO TO" button and the desired number appears before entering the "ENTRY" button. You cannot change the page number later in step 2.

■ Create Titles



1 Press the PGM MODE button in turn on the indicator.

2 Press the "←" button on the controller to select the assigned scene for a title, and press the TITLE button. The cursor, the page, programme number, etc. will be displayed on the screen.

3 Create a title using the title keyboard. For the use of the keyboard, see page 61.

Press the "GO TO" button and "GO TO" button on the controller. Titles of up to 30 pages can be created.

Note

To display the scene on which the title is to be superimposed:
Press the "←" button on the controller to recall the assigned scene on the monitor screen.
When the programme is in the "GO TO" position, press the "GO TO" button on the controller.
When the programme is a freeze picture, press the "GO TO" button on the controller.
The title will be assigned to the scene of the selected programme number.

Note

To change or clear the title on a title page, make the page appear on the screen first. You can then change the title on the page as you want. See "How to use the title keyboard" on page 61.
Press the TITLE key while pressing the SHIFT key to clear the title.

To record the contents of the title on tape:
To contents of the title, press the "GO TO" button. See page 46.

To Create Titles Independently (continued)

To clear the created title

- 1 In TITLE mode, press the PAGE + or - key on the keyboard to display the title to be cleared.
- 2 When pressing the SHIFT key, press the TITLE/ CLEAR key on the keyboard.

To change the title

- 1 In TITLE mode, press the PAGE + or - key on the keyboard to display the title to be changed.
- 2 Change the title as required using the keys on the keyboard.

Various Functions Available in Programme Editing Mode

To clear one of the programmes

- 1 When the indicator of the PGM MODE button is lit, press the "←" button on the controller to display the assigned programme number (page N or OUT point) on the monitor screen.
- 2 Press the ONE PGM CLR button.
The memory of the assigned programme number will be erased.

You can enter a new scene to the same programme number. When erasing adding, the programme with no editing data will be stored, so you can also leave the programme number without editing data.

To clear all the programmes

Before proceeding, make sure that all the programme data is unnecessary. If required, the present programme data can be recorded on tape. (See page 46.)

- 1 Press the EDITING DATA ALL CLEAR button (page 46) on the controller.
- 2 Press the "GO TO" button on the controller to display the assigned programme number (page N or OUT point) on the monitor screen.

Note

Programmes cannot be erased when data saving, data loading or programme editing is being executed.

To Record Editing Data on Tape

The editing data such as the IN and OUT points and title of each programme, can be recorded on the original tape. Once data is recorded, data can be repeatedly accessed as required. This is convenient for making two or more edited tapes of the same contents, or for adapting the programmes one day and resending the rest editing the next day.

The editing data in memory will be cleared if the VTR is disconnected from the wall outlet for a long time.



1 Assign the programmes.

Refer to "To Edit" on page 111.

2 Press the EDITING DATA SAVE button.

The tape in the PLAYER will be rewound, and the data will be recorded on tape.

During recording, the indicator on the EDITING DATA SAVE button, the indicator on the EREW TIME CODE WHITE button, and the "DATA SAVE" indication on the screen light.

After recording, the tape will stop automatically.



To stop recording the data

Press the EDITING DATA SAVE button or the ■ STOP button on the PLAYER.

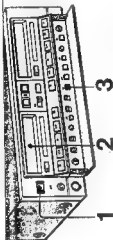
Data recording time

The data recording time is between 40 seconds and 3 minutes, depending on the number and contents of the titles included in the data.

- The editing data cannot be recorded on the tape without the time code.
- Once data recording has been stopped midway, even the data recording time is between 40 seconds and 3 minutes.
- Data recording cannot be done when the record prevention tab window on the cassette is red. Slide the tab so that the window is clear.
- Window recording will start from the point of 00:00:00 on the tape. Data recording will erase all the previous existing data on that tape.

To Access the Recorded Editing Data

When changing or adding the editing data recorded on tape, or when executing the programme editing, load data into the memory of the VTR as follows:



1 Turn on the VTR and colour monitor.

2 Insert the data recorded tape cassette into the PLAYER.

Press the EDITING DATA LOAD button.

The data will be loaded, and then loaded into the memory of the VTR.

During loading, the indicator on the EDITING DATA LOAD button and the "DATA LOAD" indication on the screen light.

After loading, the PLAYER will be set to the freeze picture mode.



To stop data loading

Press the EDITING DATA LOAD button or the ■ STOP button on the PLAYER.

Data loading time

The data loading time is between 40 seconds and 3 minutes, depending on the number and contents of the titles included in the data.

Notes

- Data cannot be accessed correctly if the tape is damaged or if the programme with the data is not the data code on the tape.
- If there is no editing data recorded on the tape, the "DATA LOAD" indication on the screen light will not appear. Press the EDITING DATA LOAD button again to release loading mode.

Simple Insert Editing — with a New Scene and Sound

What Is Simple Insert Editing?

Simple insert editing is used for replacing a portion of the prerecorded tape with a new scene and sound. This is convenient for inserting a title, etc.

1. Locate the point where the IN point and OUT point of editing on tape for editing. Then, locate the beginning of the editing (IN point) and the scene to be edited, and press EDIT button.

The time code should have been recorded on tape for editing. This is not necessary for the original tape.

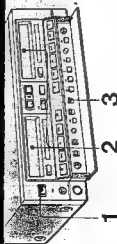
Insert source tape in the PLAYER



Notes

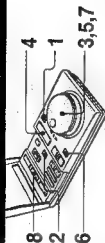
- * To record the time code on a tape, see page 60.
- * In simple insert editing, the picture and sound are edited together. For the sound to be edited, refer to "Video/Audio Input and Output Settings" on page 66.
- * Simple insert editing cannot be done with an LP recorded tape.

Preparation



- 1 Turn on the VTR and output monitor.
- 2 Insert the original tape cassette into the PLAYER and a cassette for editing into the RECORDER.
- 3 Set the RECORDER INPUT SELECT switch to PLAYER.

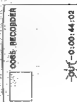
To Edit



- 1 Press the RECORDER button, and play back the tape for editing on the RECORDER.

- 2 Press the INSERT button.

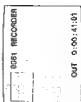
The indicator on the button will light.



- 3 Locate the point on tape where editing should start (IN point) using the JOG dial and SHUTTLE ring, and set the RECORDER to the freeze picture mode.

- 4 Press the ENTRY button.

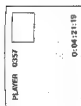
The OUT point is now stored in memory.



- 5 Locate the point where editing should start (IN point) using the JOG dial and SHUTTLE ring, and set the RECORDER to the freeze picture mode.

Simple Insert Editing

- 6** Press the **PLAYER** button, and play back the original tape on the **PLAYER**.



- 7** Locate the beginning of the scene you want to edit using the **JOG** and **SHUTTLE** keys, and set the **PLAYER** to the freeze picture mode.

- 8** Press the **EDIT** button.
Play will begin, and then the picture and sound of the original tape will be edited between the IN point and OUT point.

Once editing is completed, both the **PLAYER** and **RECORD** will be set to the freeze picture mode.

Notes

- The edited picture will be distorted at the OUT point, as the newly edited picture and the pre-recorded picture may be connected smoothly at the OUT point.
- The minimum editing length for simple insert editing is 10 seconds.
- A freeze picture, time freeze, or motion or freeze picture with a little superimposed can also be edited using the simple insert editing method. To edit these programmed, freeze picture, time freeze picture, and motion or freeze picture, see page 52.
- The display "LP MODE" may appear on the monitor. This is the LP (Long Play) mode. You cannot do simple insert editing in LP mode.

To record a statement or narration during simple insert editing:
Connect a microphone to the MIC jack. When the indicator of the REC button is lit, the sound picked up from the microphone is recorded on the standard track of tape.

On the PCH track, only the microphone sound is recorded.

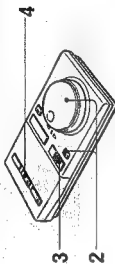
To stop simple insert editing

Before pressing the **EDIT** button: Press the **INSERT** button to turn off the indicator.

During editing: Press the **END** button.

To Edit a Freeze Picture

This VTR can store one frame of the picture in memory, and use the stored picture as a freeze picture for editing.

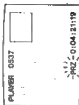


- 1** Assign the editing OUT point, and locate the IN point on the **RECORD**, referring to steps 1 through 5 on page 49.

- 2** Press the **PLAYER** button, locate the scene to be edited as a freeze picture, and set the **PLAYER** in the freeze picture mode.

- 3** Press the **FREEZE** button.

The "FTRZ" indication will flash.



- 4** Press the **EDIT** button.

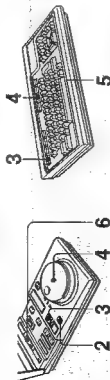
The freeze picture will be edited between the IN point and the OUT point.

Notes

During freeze picture editing, the playback sound of the original tape will be recorded.

To Edit a Title

By considering the supplied title keyboard, you can create a title using the alphabet, numerals and several special characters. The background, as superimposed onto the picture being edited. For connection of the title keyboard, see page 19.

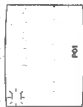


1 Assign the editing CUT point, and locate the IN point on the RECORDER, referring to steps 1 through 5 on page 48.

2 Press the PLAYER button.

3 Press the TITLE button.

The subsidiary picture will disappear. The cursor will blink on the monitor screen.



4 To superimpose a title on a motion picture: Locate the beginning of the desired scene, and set the PLAYER to the freeze picture mode. Press the SCHW. button. Locate the desired scene, set the PLAYER to the freeze picture mode and press the FREEZE button. To edit a title frame: Set the PLAYER to freeze picture mode and select the black background with the BLACK key on the title keyboard.

5 Create a title using the title keyboard.

For details on the use of the keyboard, see page 61.

6 Press the EDIT button.

The title, with the black background or the title superimposed on the picture will be edited between the IN point and the OUT point.

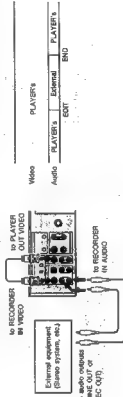
NOTE

When the title is superimposed on the picture, the picture sound of the original tape will be recorded during editing. Press the RECORDER INPUT SELECT switch to set to LINE. The title cannot be recorded on the RECORDER.

The picture from the PLAYER can be edited together with the sound from external audio equipment, as the picture from external video equipment can be edited together with the sound from the PLAYER.

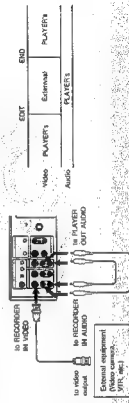
To edit the picture from the PLAYER and the sound from external audio equipment

The editing procedure is the same as that of quick editing. See page 30. The tape will be edited as shown below.



To edit the picture from external video equipment and the sound from the PLAYER

The editing procedure is the same as that of quick editing. See page 30. The tape will be edited as shown below.



To Edit onto Another VTR

Fine Adjustment of the IN and OUT points

Recording start or stop on the connected VTR may not be accurately synchronized with this unit. In this case, the beginning or ending of a scene, edited OUT, may be made in this unit. The IN and OUT points of the starting and ending of a scene can be adjusted. The IN and OUT points are adjusted by the IN and OUT point ADJ. buttons. When the IN and OUT points are adjusted, the timing of transmission of the recording start/stop control signal from this unit so that the complete scene can be edited.

To adjust the IN point



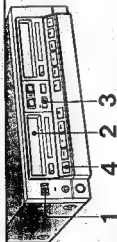
To adjust the OUT point



Once the IN and OUT point adjustments are performed, repeated adjustments are not necessary for the same VTR.

To Record the Time Code

This VTR is capable of recording the time code required for programme editing or simple insert editing on tape. The time code will be recorded from 00:00:00.00 to 99:59:59.99. When recording starts, if a time code has been recorded at that point on tape, it will be recorded from the next set of digits.



1 Turn on the VTR and colour monitor.

2 Insert a tape cassette to record the time code into the PLAYER, and locate the point of tape where time code recording is to start. Set the PLAYER to the freeze picture mode or stop mode.

3 Slide the 8 mm TIME CODE WRITE switch to the right. The indicator on the switch will light and time code recording will begin. During recording, the elapsed picture will be displayed on the monitor screen.

4 To stop time code recording, press the STOP button on the PLAYER.

When the tape reaches the end of time code recording, it will be returned to the beginning automatically.

Notes

- Record the time code on the pre-recorded portion of the tape only. Otherwise, editing may not be correctly performed.
- Time code recording cannot be achieved when the record prevention tab window of the cassette is set.
- When the MONITOR AUDIO OUTPUT SELECT switch is set to the MONITOR position, the time code will be heard. When the switch is set to the PCOL position, the time code will not be heard. This does not affect the pre-recorded picture and sound.
- When the MONITOR AUDIO OUTPUT SELECT switch is set to the MONITOR position, a black band appears on the screen during recording of the time code.

How to Use the Title Keyboard

The title keyboard supplied is used to create titles to be inserted in each edited, programme editing or simple insert editing. For details on editing the titles, refer to "To edit a title" or "To assign a title as a programme" in each editing method.

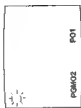
For connection of the title keyboard, see page 19.

To start creating a title, press the cursor key on the title keyboard. The cursor will blink on the monitor screen. A character can be input at the cursor position.

To input a character

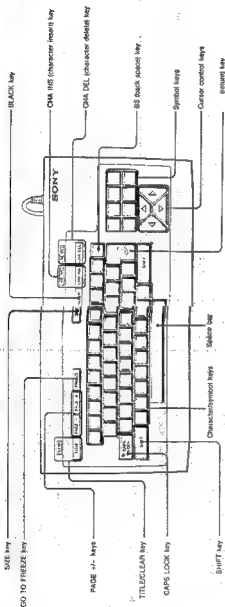
Press the desired character key.

[SHIFT] + [] in the title keyboard. Pressing the SHIFT key first, press the key on the right of the " " symbol.



Character to be input	Keys to be pressed	To input:	Example
Capital letter	[SHIFT] + Character key	M	[SHIFT] + M
Small letter	Character key	m	M
Number	Number key	3	3
Symbol indicated on the lower part of the key	Symbol key	#	[SHIFT] + #
Symbol indicated on the upper part of the key	[SHIFT] + Symbol key	#	[SHIFT] + #

How to Use the Title Keyboard



To move the cursor
Press the cursor key. The cursor moves in the direction indicated on the key.

To move the cursor to the next line
Press the \uparrow key.

To delete a character

To delete the character at the cursor position, press the \rightarrow key.

To delete the middle line, press the CHA DEL key.

While creating the SH-PT key.

To delete the previous character, press the BS (backspace) key.

To insert a character

Press the CHA INS key. A blank space is inserted at the cursor position.

To insert a character, press the CHA INS key.

While pressing the SH-PT key, press the CHA INS key.

While pressing the SH-PT key, press the CHA INS key.

While pressing the SH-PT key, press the CHA INS key.

While pressing the SH-PT key, press the CHA INS key.

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While pressing the SH-PT key, press the CHA INS key.

While pressing the SH-PT key, press the CHA INS key.

While pressing the SH-PT key, press the CHA INS key.

To change the character size
Press the key. The size of the cursor changes in the color as illustrated below.

The cursor size indicates the character size.

Press the key. The size of the cursor changes in the color as illustrated below.

The cursor size indicates the character size.

Press the key. The size of the cursor changes in the color as illustrated below.

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The cursor size indicates the character size.

Press the key. The size of the cursor changes in the color as illustrated below.

The cursor size indicates the character size.

To change the title page
Press the PAGE + key for the next page, and the PAGE - key for the previous page. The title page can be selected. The character displayed on each page are retained in memory.

To display the frame picture on which a title is to be superimposed

When the indicator of the PGM MODE button is lit, select the program number to which the frame picture is assigned with the PGM MODE button on the keyboard.

Press the GO TO FREEZE key on the keyboard.



To select the background

Press the BLACK key. A black or transparent background can be selected alternately. To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

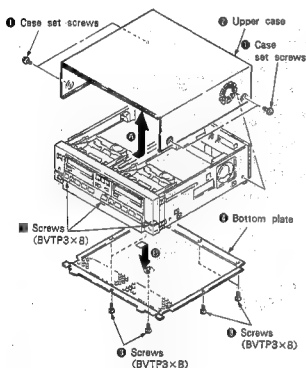
To select a transparent background, press the CHA DEL key.

To select a black background, press the CHA INS key.

SECTION 2 DISASSEMBLY

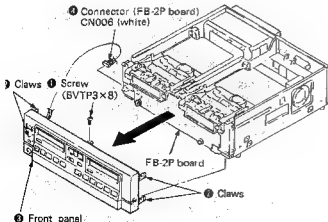
2.1. REMOVAL OF CABINET

- 1) Remove the four case set screws ①.
- 2) Remove the upper case ② in the direction of arrow ④.
- 3) Remove the nine screws ③.
- 4) Remove the bottom plate ⑤ in the direction of arrow ⑥.



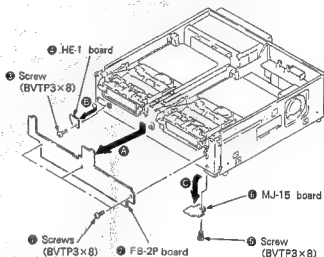
2.2. REMOVAL OF FRONT PANEL

- 1) Remove the a screw ①.
- 2) Disengage the claws ② in four places.
- 3) Remove the front panel ③ in the direction of arrow.
- 4) Remove the connector (CN006) ④ from the FB-2P board.



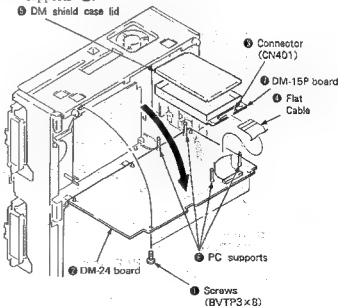
2.3. REMOVAL OF THE FB-2P, HE-1 AND MJ-15 BOARDS

- 1) Remove the three screws ①.
- 2) Remove the FB-2P board: ② in the direction of arrow ④.
- 3) Remove the screw ③, and remove the HE-1 board ⑤ in the direction of arrow ⑥.
- 4) Remove the screw ⑦, and remove the MJ-15 board ⑧ in the direction of arrow ⑨.



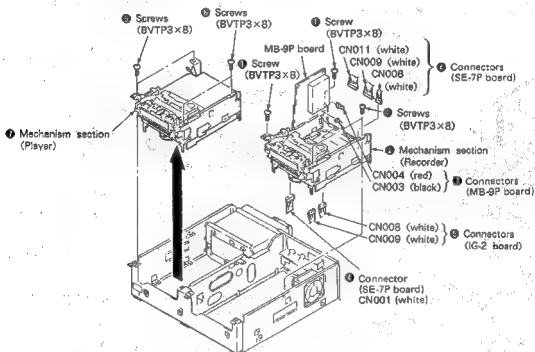
2.4. OPENING THE DM-24 AND DM-15P BOARDS

- 1) Remove the two screws ①.
- 2) Open the DM-24 board ② in the direction of the arrow.
- 3) Remove the flat cable ③ from the connector (CN401) ④.
- 4) Remove the DM shield case lid ⑤.
- 5) Remove the DM-15P board ⑥ from the four PC supports ⑦.



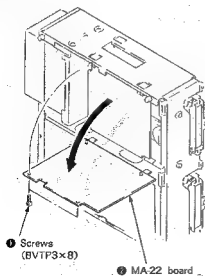
2.5. REMOVAL OF MECHANISM SECTIONS

- 1) Remove the four screws ①, and remove the mechanism section ②.
- 2) Open the MB-9P board as described in 2-10.
- 3) Remove the two connectors (CN003, CN004) ③ from the MB-9P board.
- 4) Remove the four connectors (CN001, CN008, CN009, CN011) ④ from the SE-7P board.
- 5) Remove the two connectors (CN008, CN009) ⑤ from the IG-2 board.
- 6) Remove the four screws ⑥, and remove the mechanism section ⑦.
- 7) Remove the connector as described for the other mechanism section (recorder).



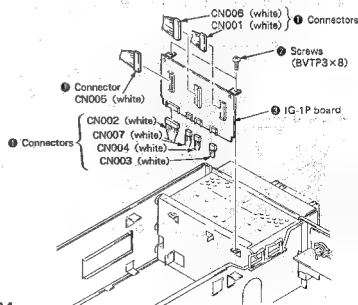
2.6. OPENING THE MA-22 BOARD

- 1) Remove the two screws ①.
- 2) Open the MA-22 board ② in the direction of the arrow.



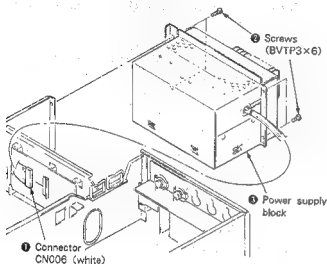
2.7. REMOVAL OF THE IG-1P BOARD

- 1) Remove the seven connectors (CN001 to CN007) ①.
- 2) Remove the two screws ②.
- 3) Remove the IG-1P board ③.



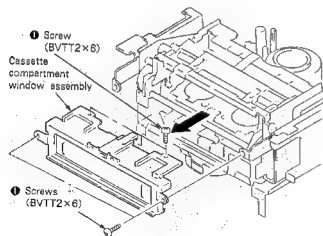
2.8. REMOVAL OF POWER SUPPLY BLOCK

- 1) Remove the connector (CN006) ①.
- 2) Remove the four screws ②.
- 3) Remove the power supply block ③.



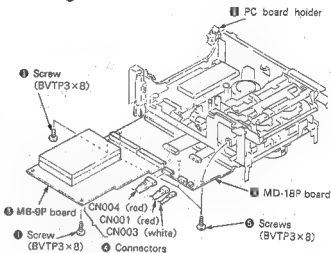
2.9. REMOVAL OF CASSETTE COMPARTMENT WINDOW ASSEMBLY

- 1) Remove the four screws ①.
- 2) Remove the cassette compartment window assembly ② in the direction of the arrow.



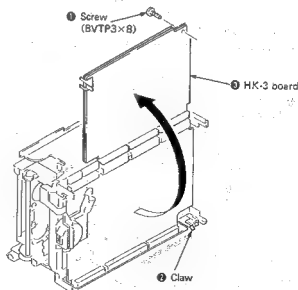
2.10. OPENING THE MB-9P AND MD-18P BOARDS

- 1) Remove the two screws ①.
- 2) Disengage the claws of the board holder ② and open the MB-9P board ③.
- 3) Remove the three connectors (CN001, CN003, CN004) ④.
- 4) Remove the three screws ⑤, and open the MD-18P board ⑥.



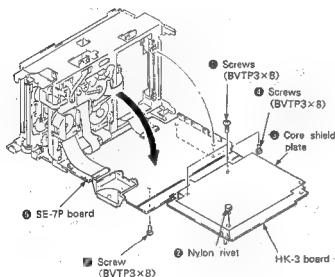
2.11. OPENING THE HK-3 BOARD

- 1) Remove the screw ①.
- 2) Disengage the claw ② and open the HK-3 board ③ in the direction of the arrow.



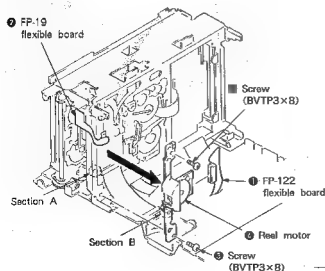
2-12. OPENING THE SE-7P BOARD

- 1) Remove the two screws ①.
- 2) Remove the nylon rivet ② and core shield plate ③.
- 3) Open the HK-3 board as described in 2-11.
- 4) Remove the three screws ④.
- 5) Open the SE-7P board ⑤ in the direction of the arrow.



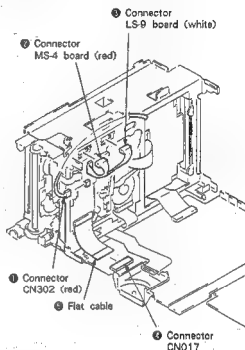
2-13. REMOVAL OF REEL MOTOR

- 1) Remove the FP-122 flexible board ①.
- 2) Remove the FP-19 flexible board ②.
- 3) Remove the two screws ③.
- 4) Insert a minus screwdriver at section A and disengage protrusion at section B.
- 5) Remove the reel motor ④ in the direction of the arrow.

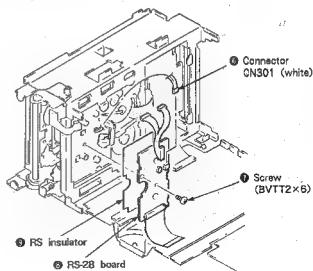


2-14. REMOVAL OF THE RS-28 BOARD

- 1) Remove the connector (CN302) ①.
- 2) Remove the connectors (MS-4 board, red) ②, (LS-9 board, white) ③.
- 3) Disconnect the flat cable ④ from the connector (CN017) ⑤.



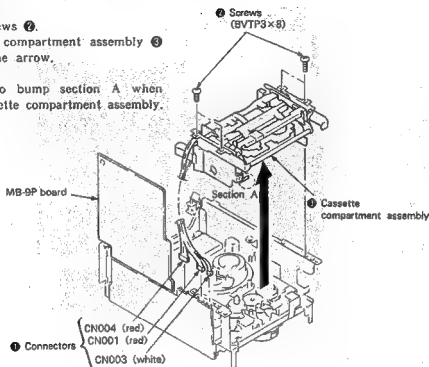
- 4) Remove the connector (CN301) ⑥.
- 5) Remove the screw ⑦.
- 6) Remove the RS-28 board ⑧ and the RS insulator ⑨.



2-15. REMOVAL OF CASSETTE COMPARTMENT ASSEMBLY

- 1) Open the MB-9P board as described in 2-10.
- 2) Remove the three connectors (CN001, CN003, CN004) ①.
- 3) Remove the four screws ②.
- 4) Remove the cassette compartment assembly ③ in the direction of the arrow.

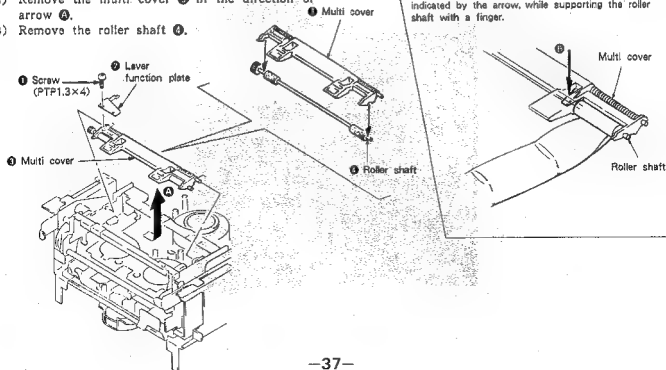
Note: Be careful not to bump section A when removing the cassette compartment assembly.



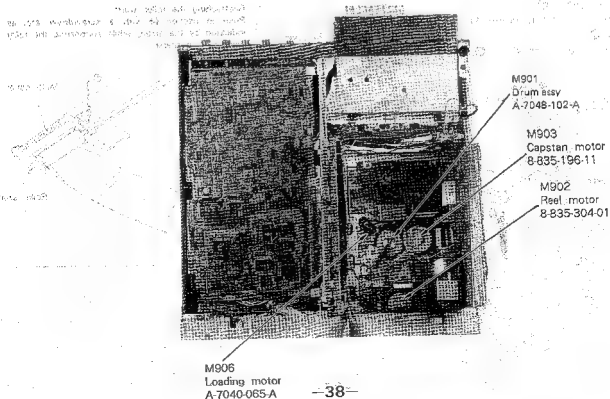
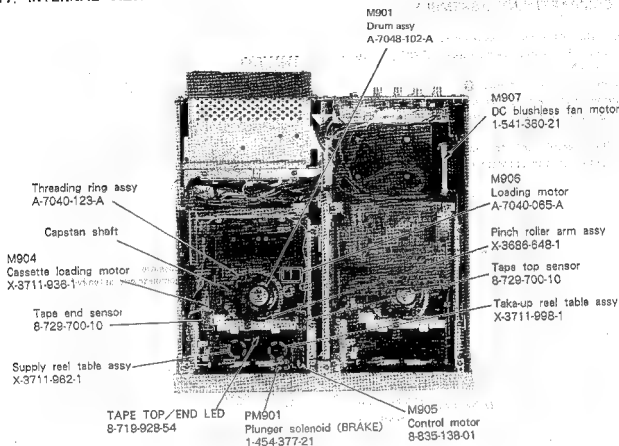
2-16. REMOVAL OF MULTI COVER AND ROLLER SHAFT

- 1) Remove the screw ①, and remove the lever function plate ②.
- 2) Remove the multi cover ③ in the direction of arrow ④.
- 3) Remove the roller shaft ⑤.

Reattaching the roller shaft:
Push in section ⑥ with a screwdriver etc. as indicated by the arrow, while supporting the roller shaft with a finger.



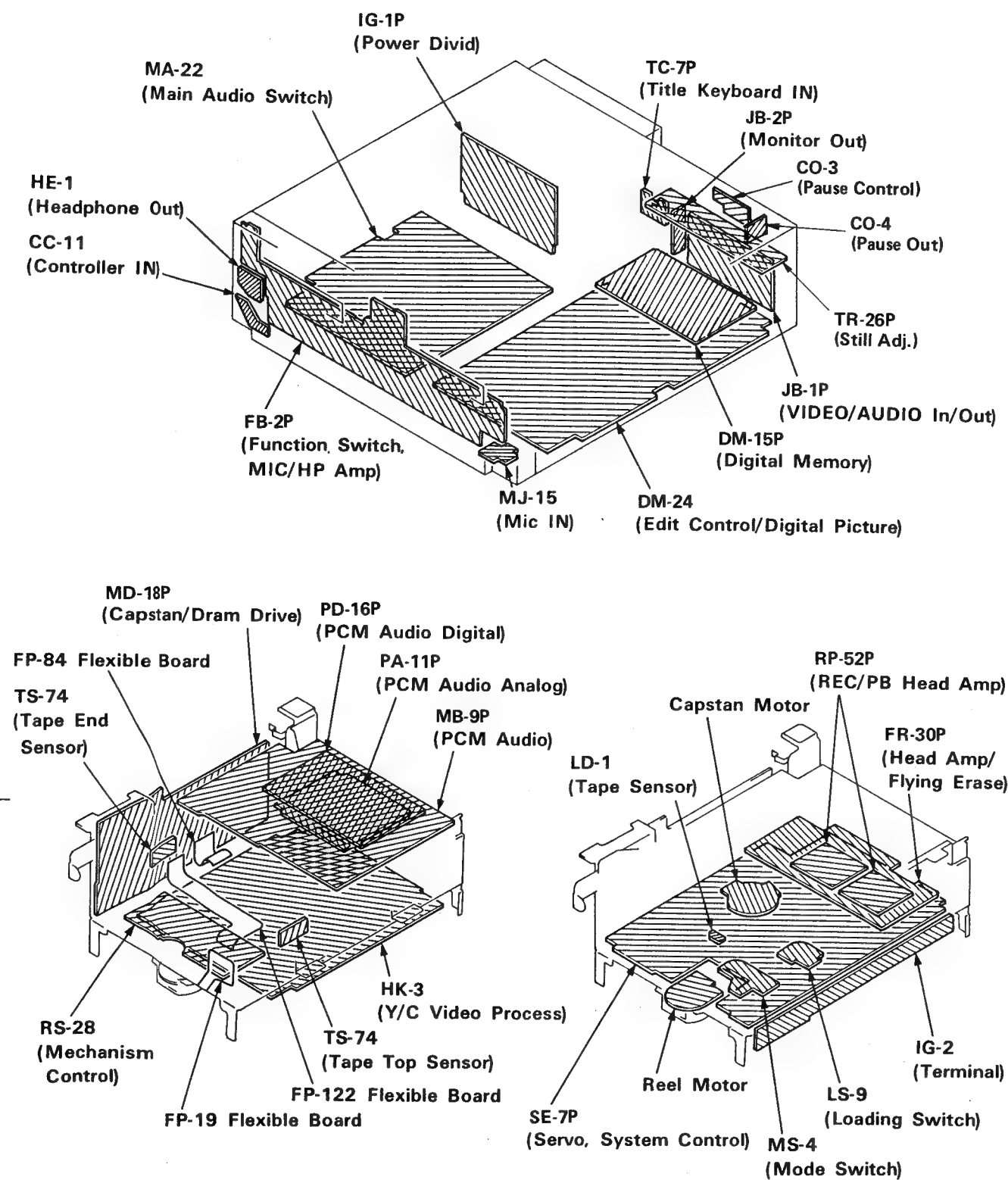
2.17. INTERNAL VIEW



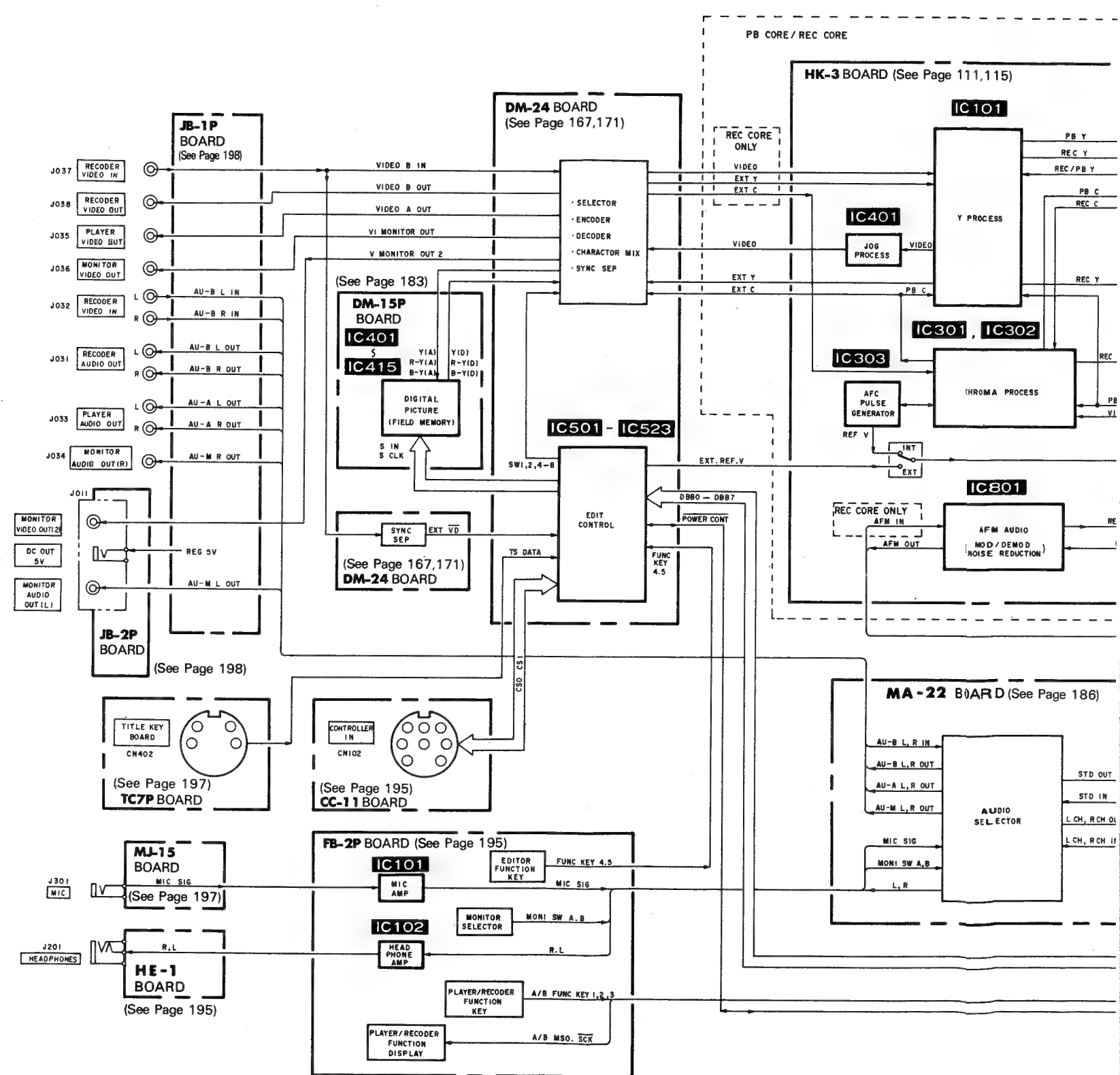
SECTION 3

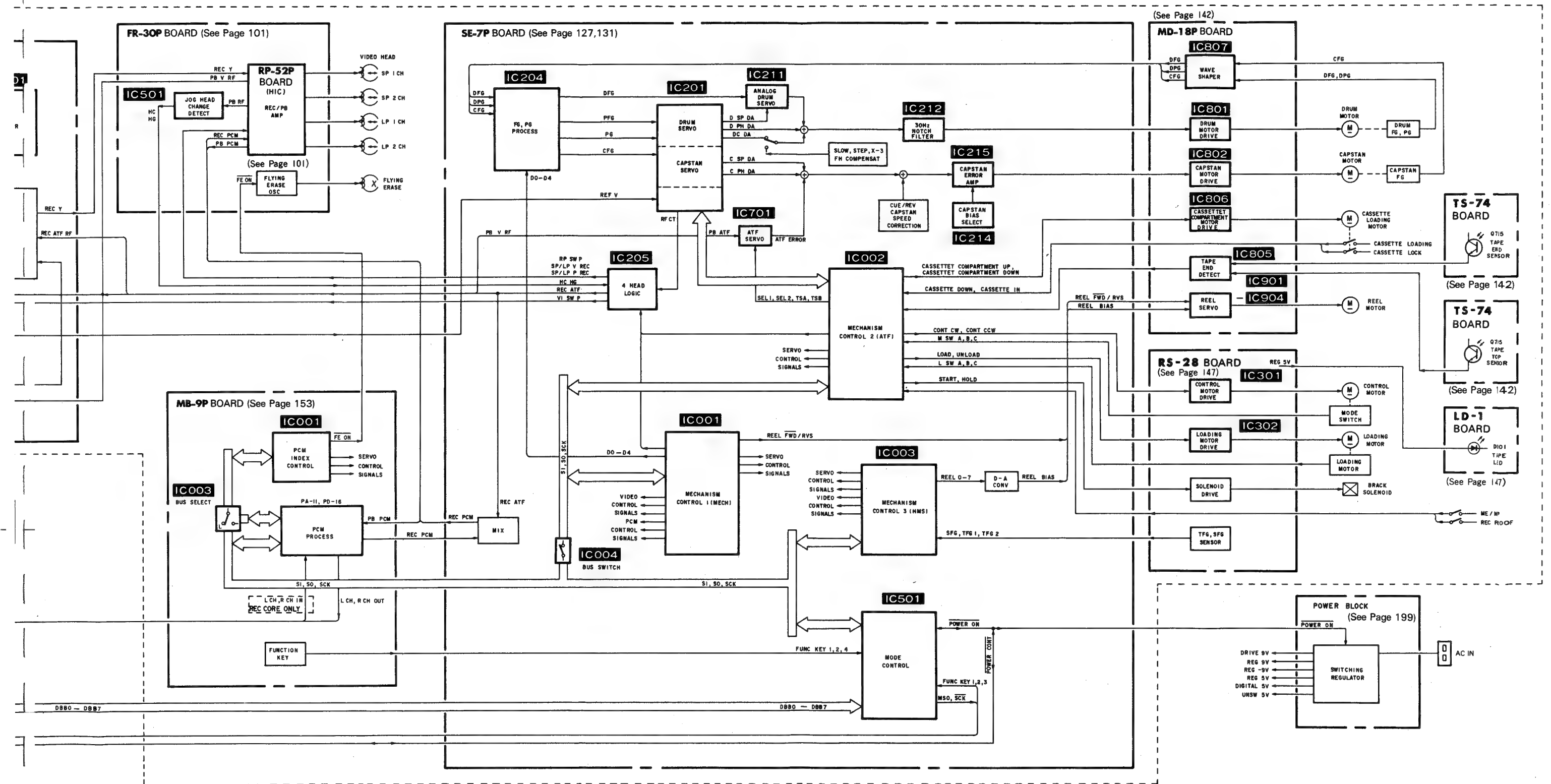
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION

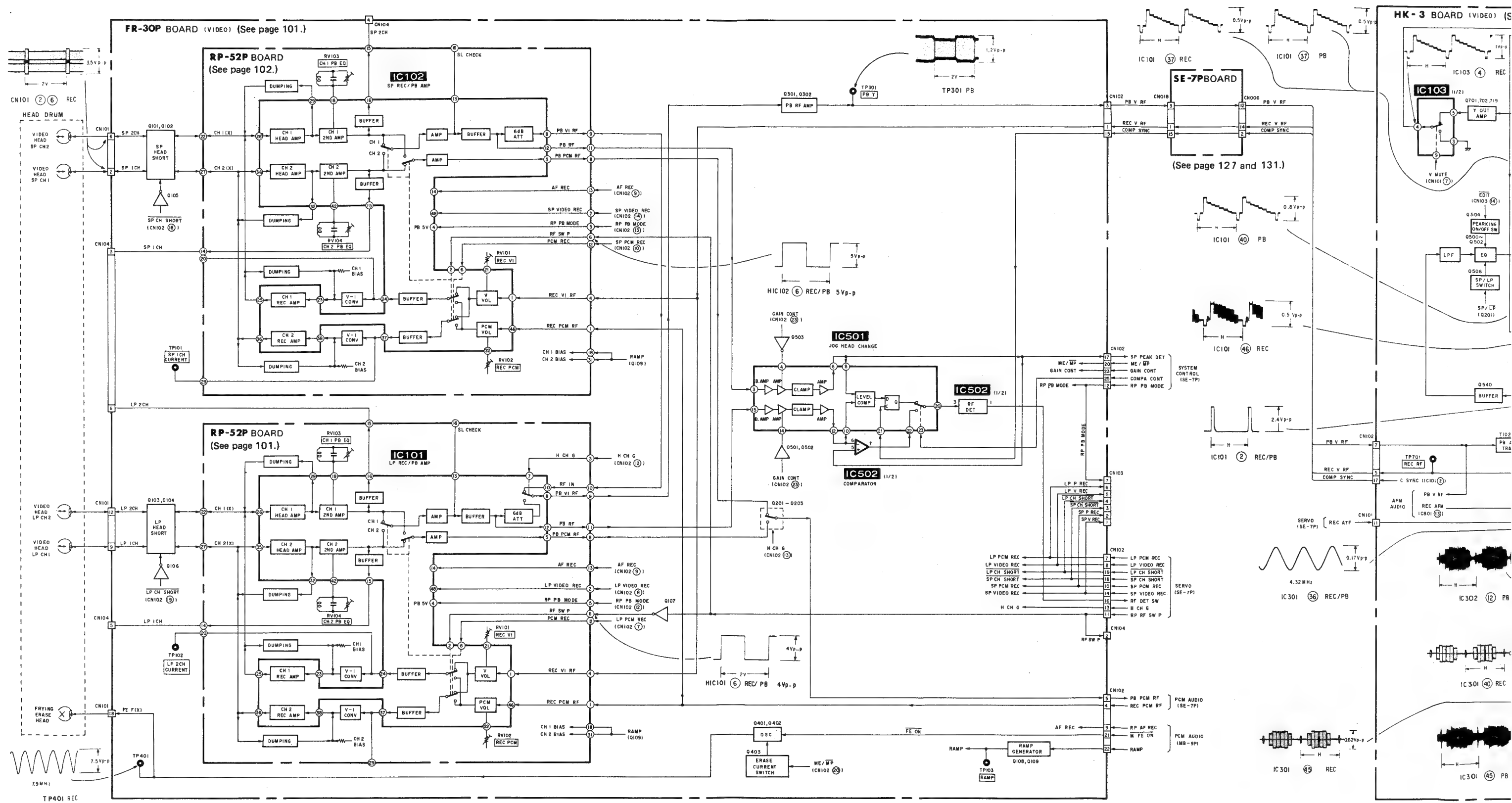


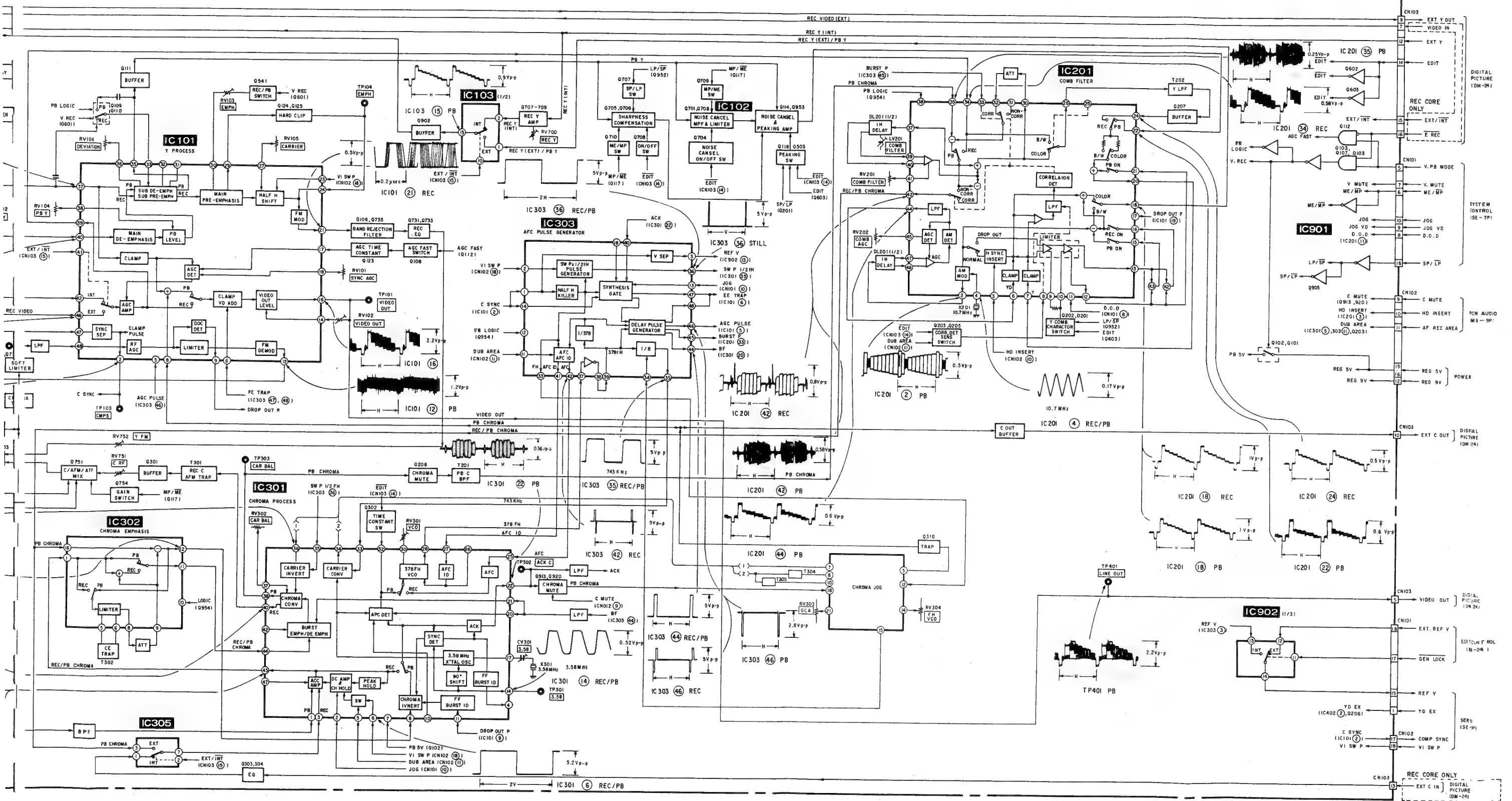
3-2. OVERALL BLOCK DIAGRAM



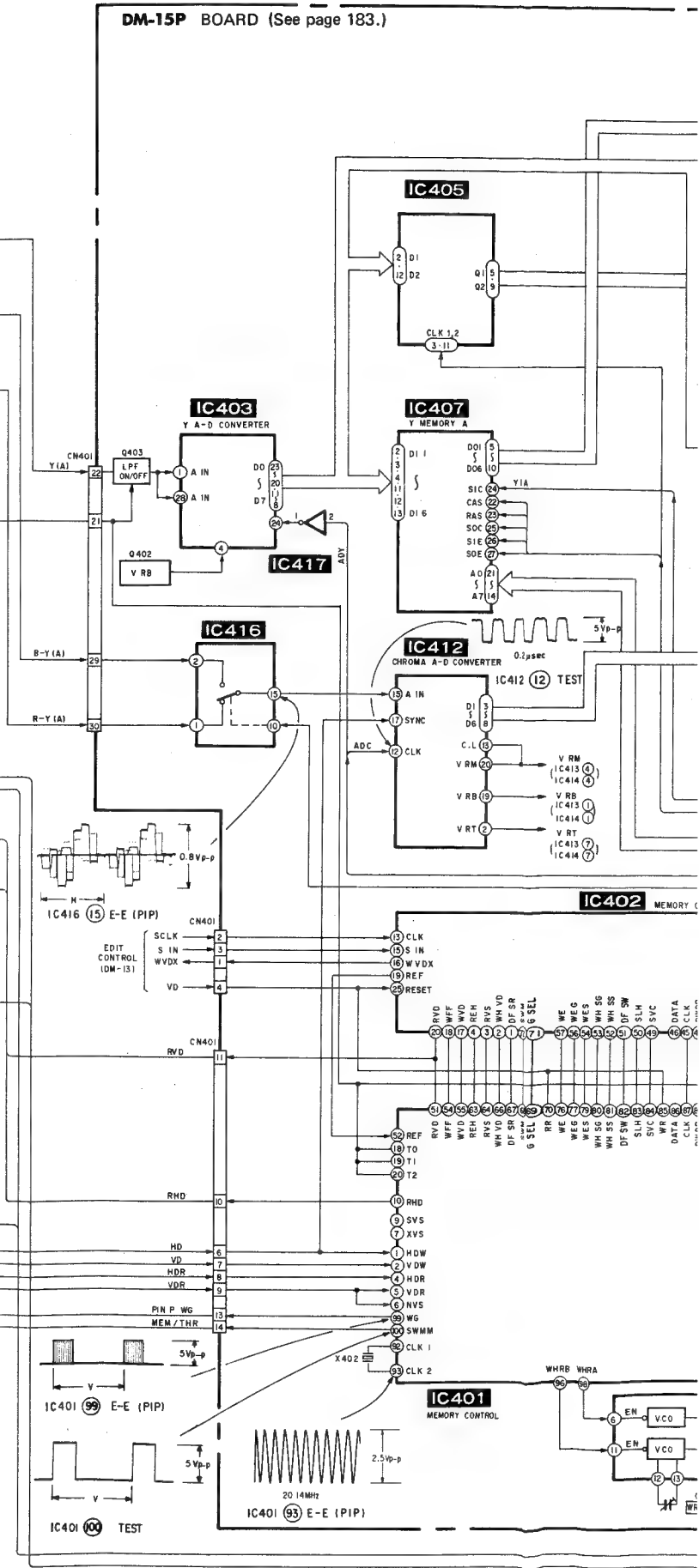
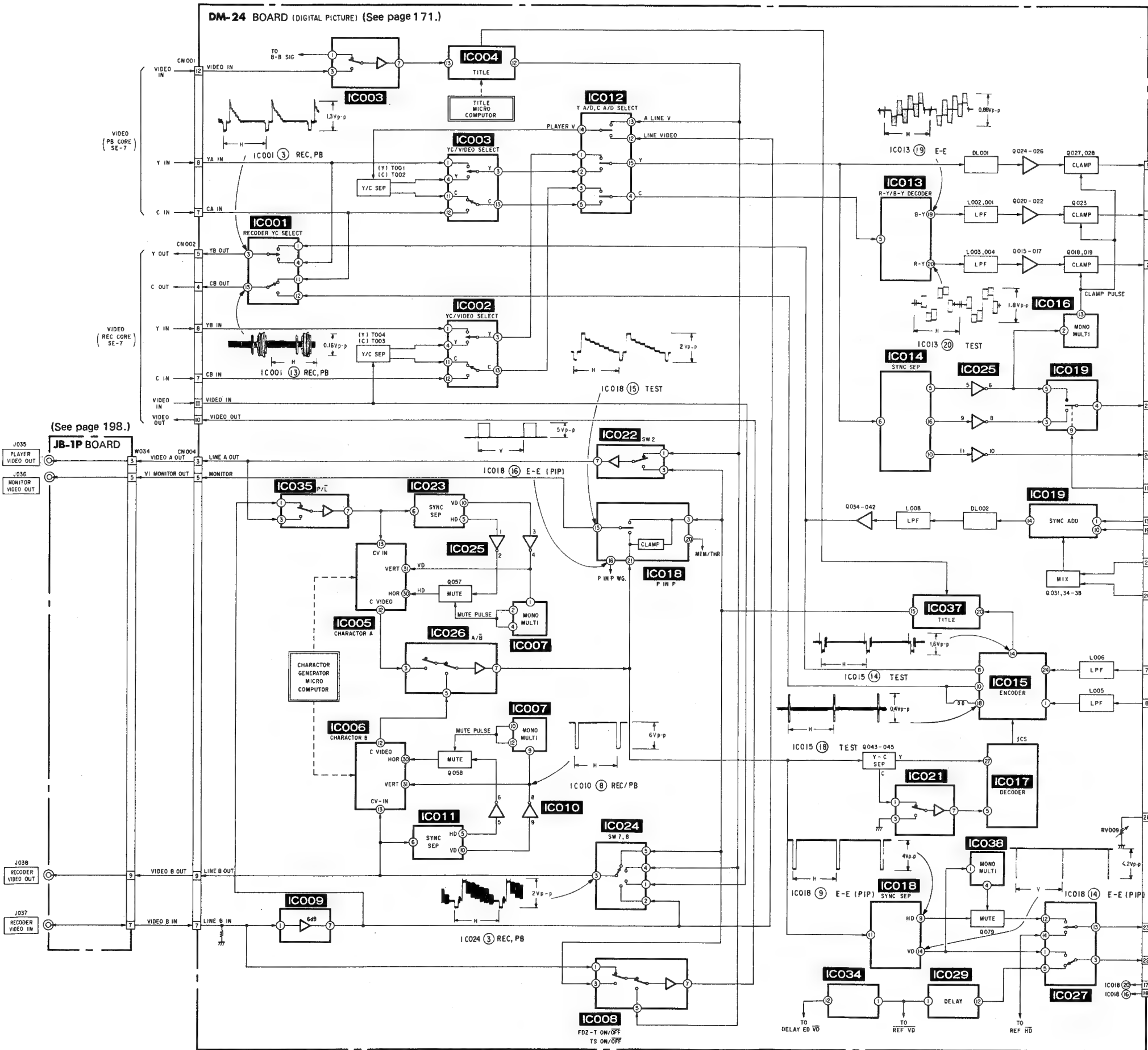


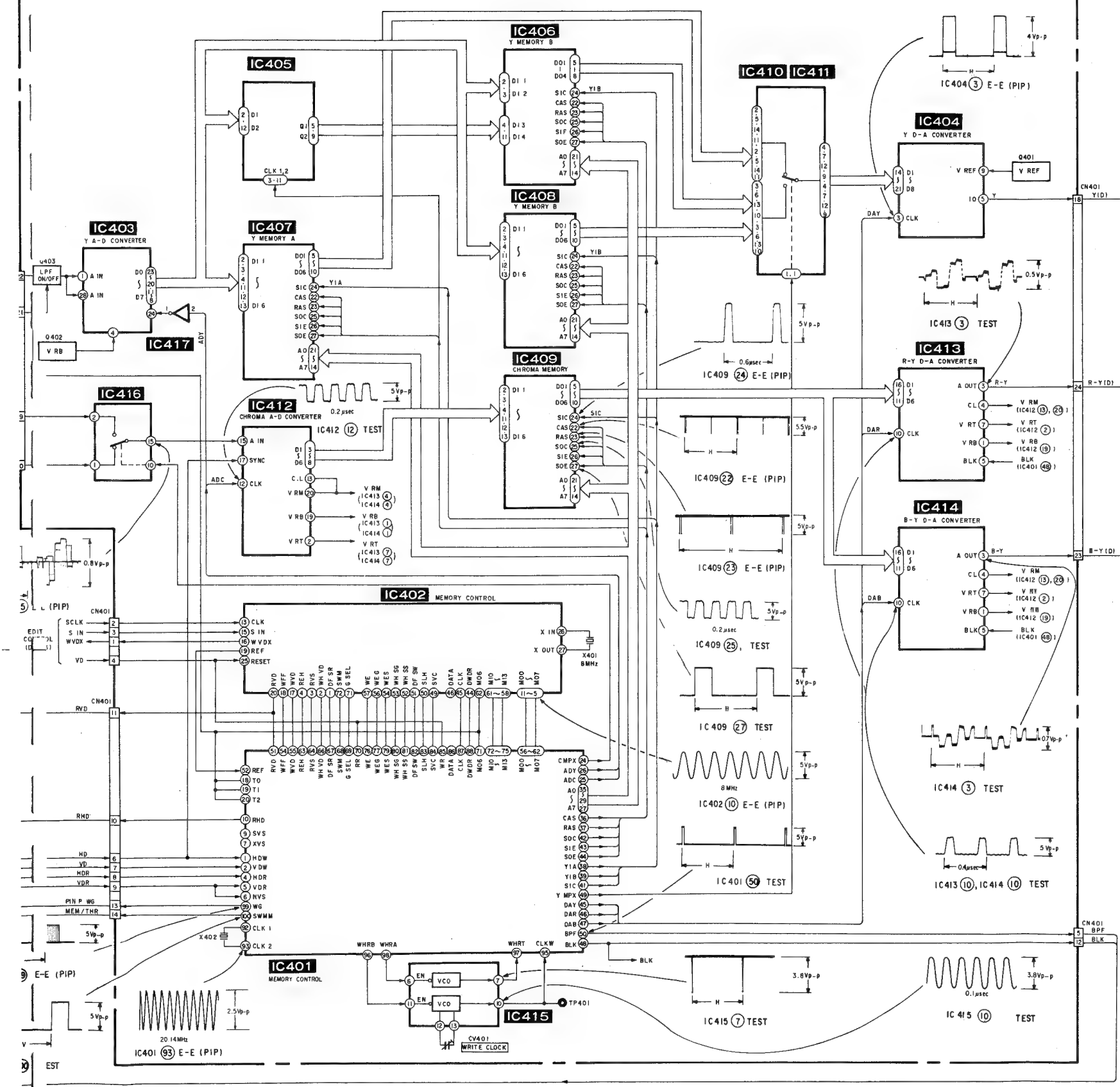
3-3. VIDEO BLOCK DIAGRAM

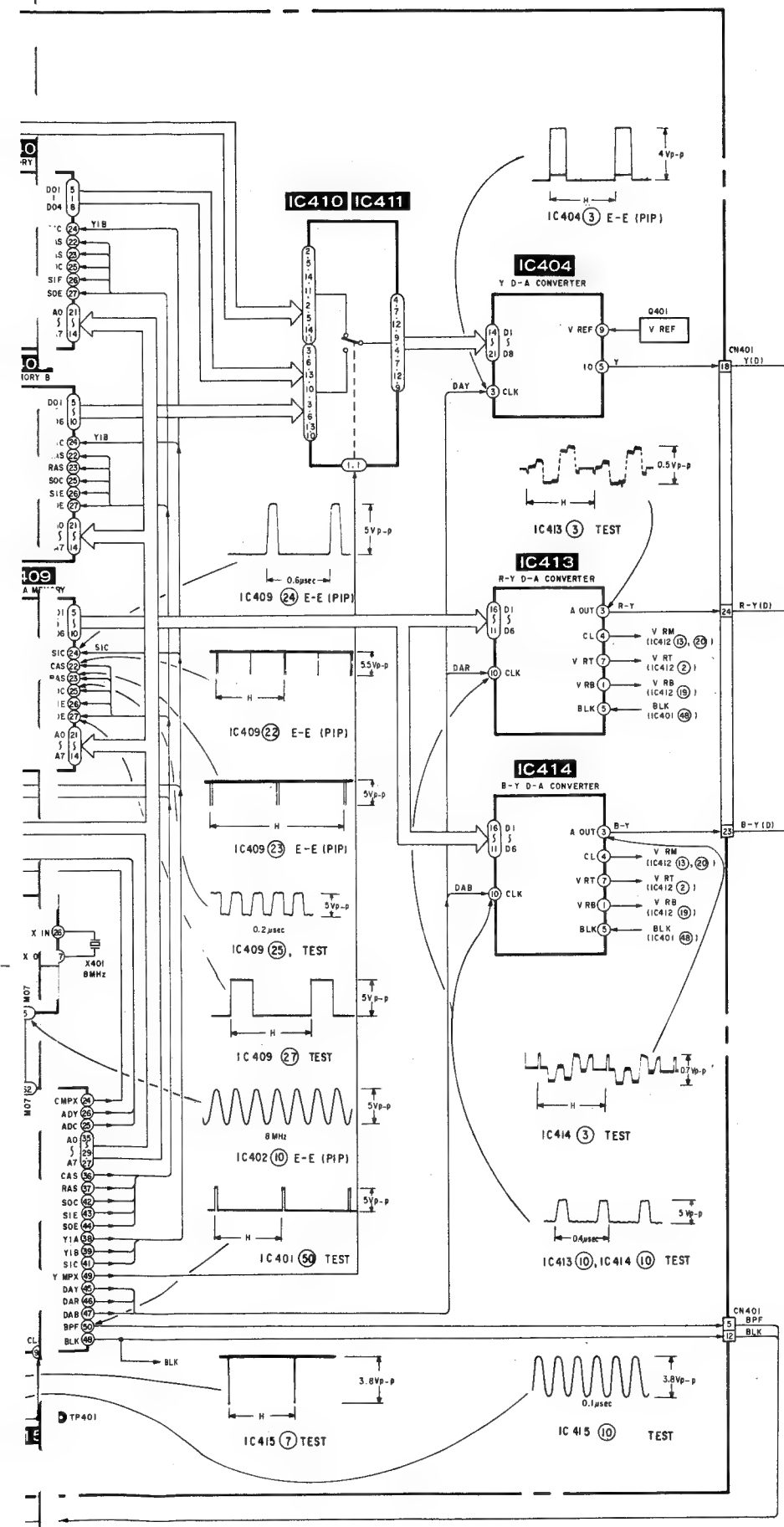




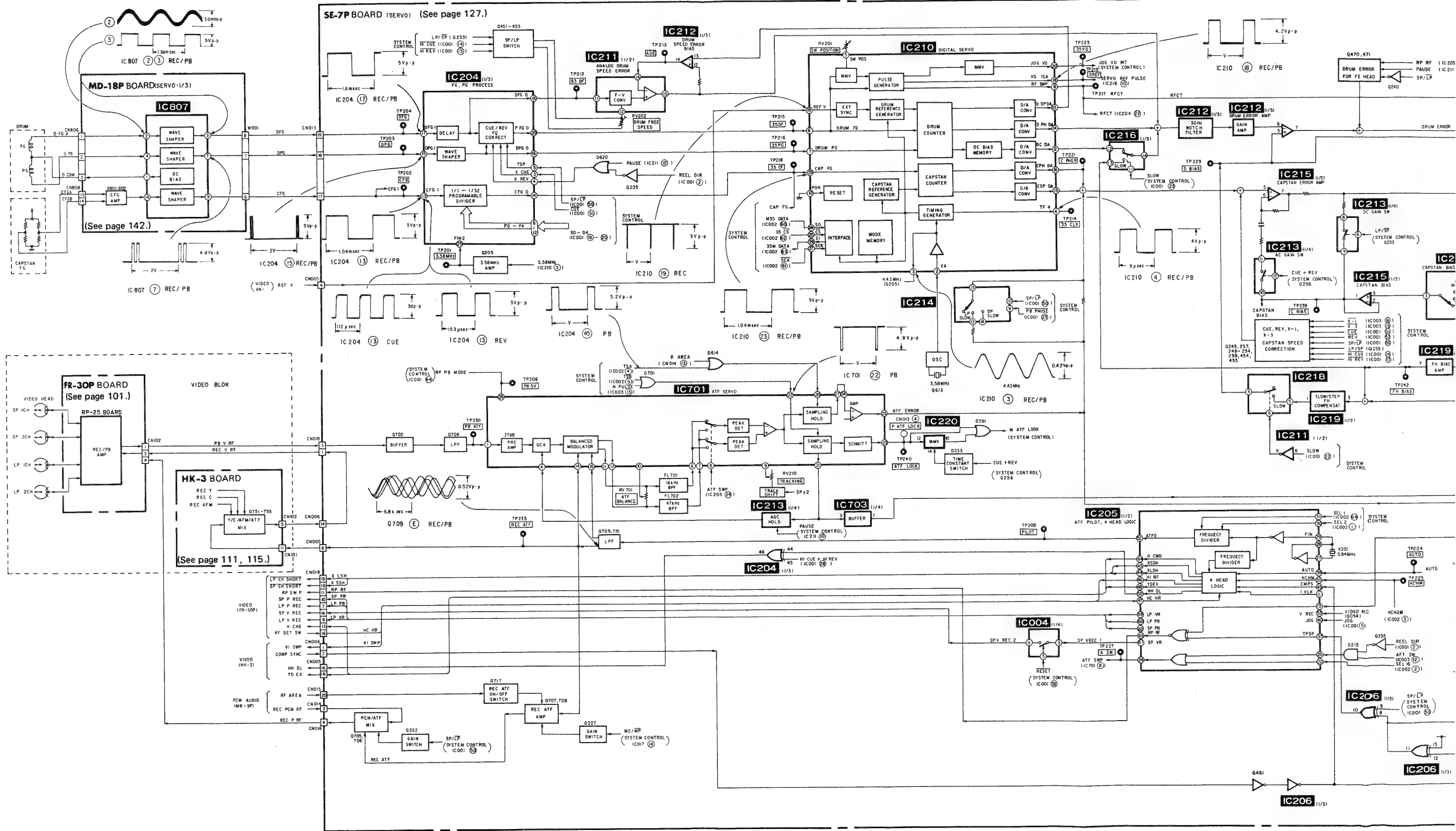
3.4. DIGITAL PICTURE BLOCK DIAGRAM

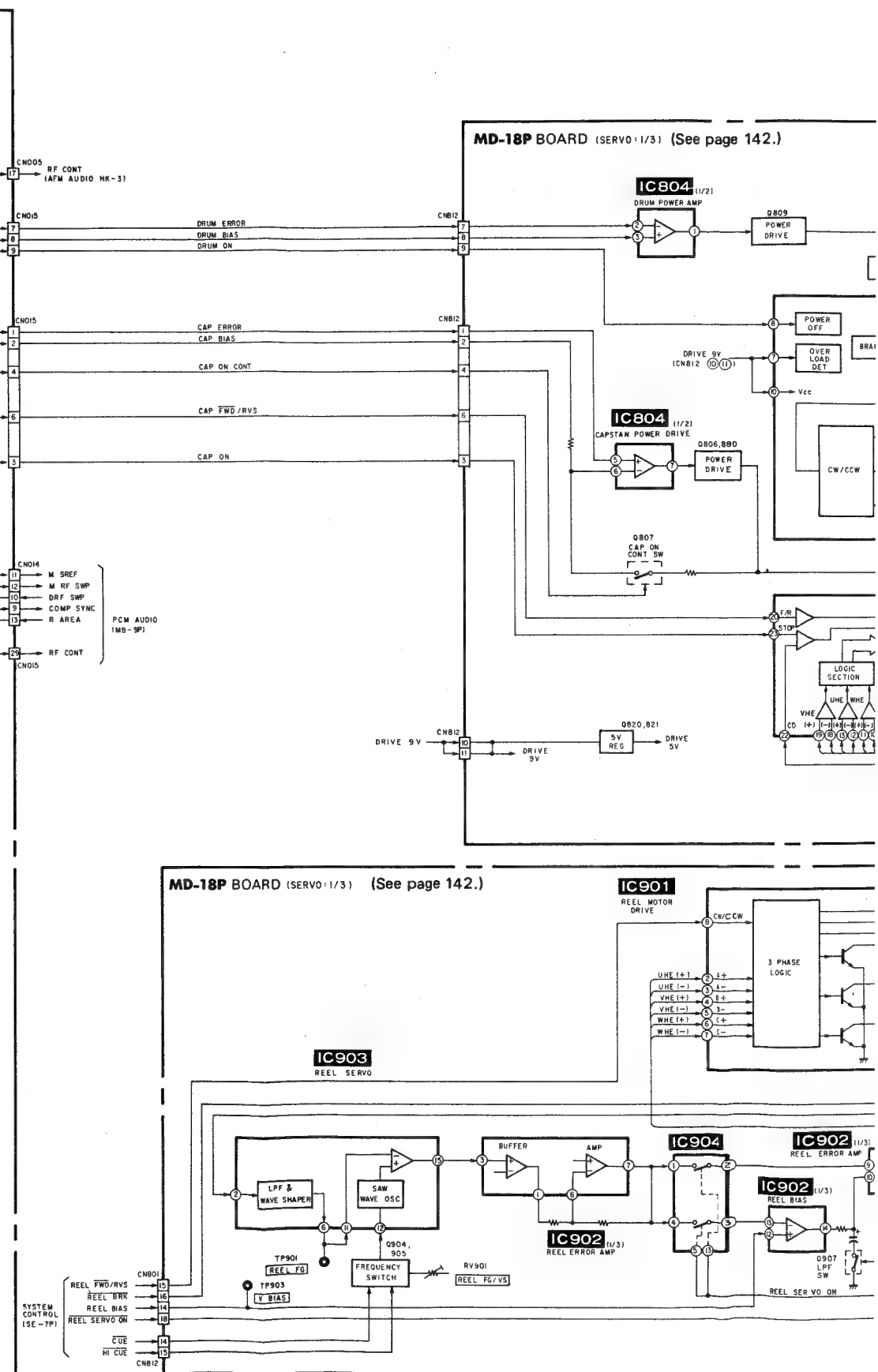


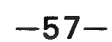




3-5. SERVO BLOCK DIAGRAM

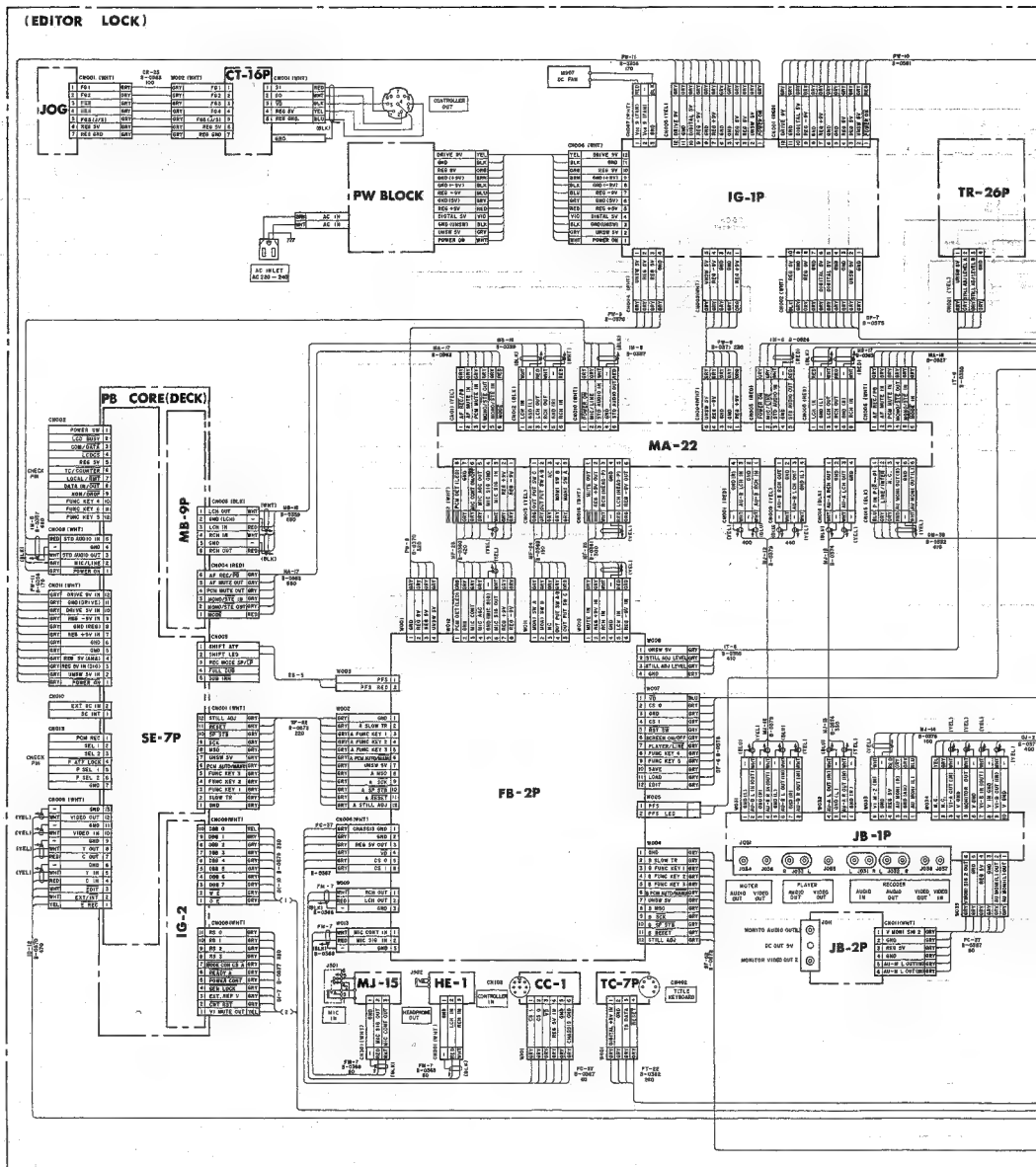


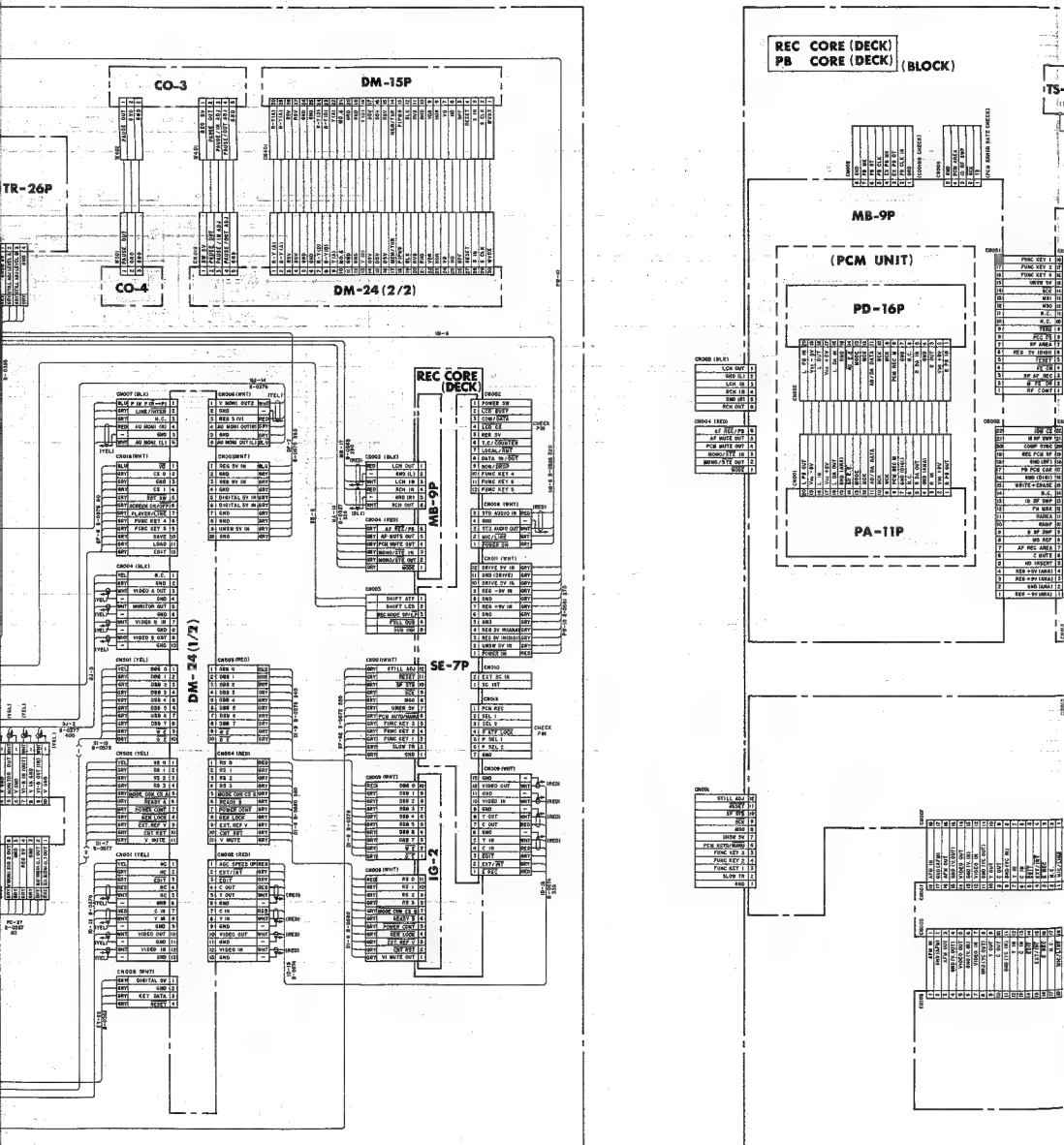


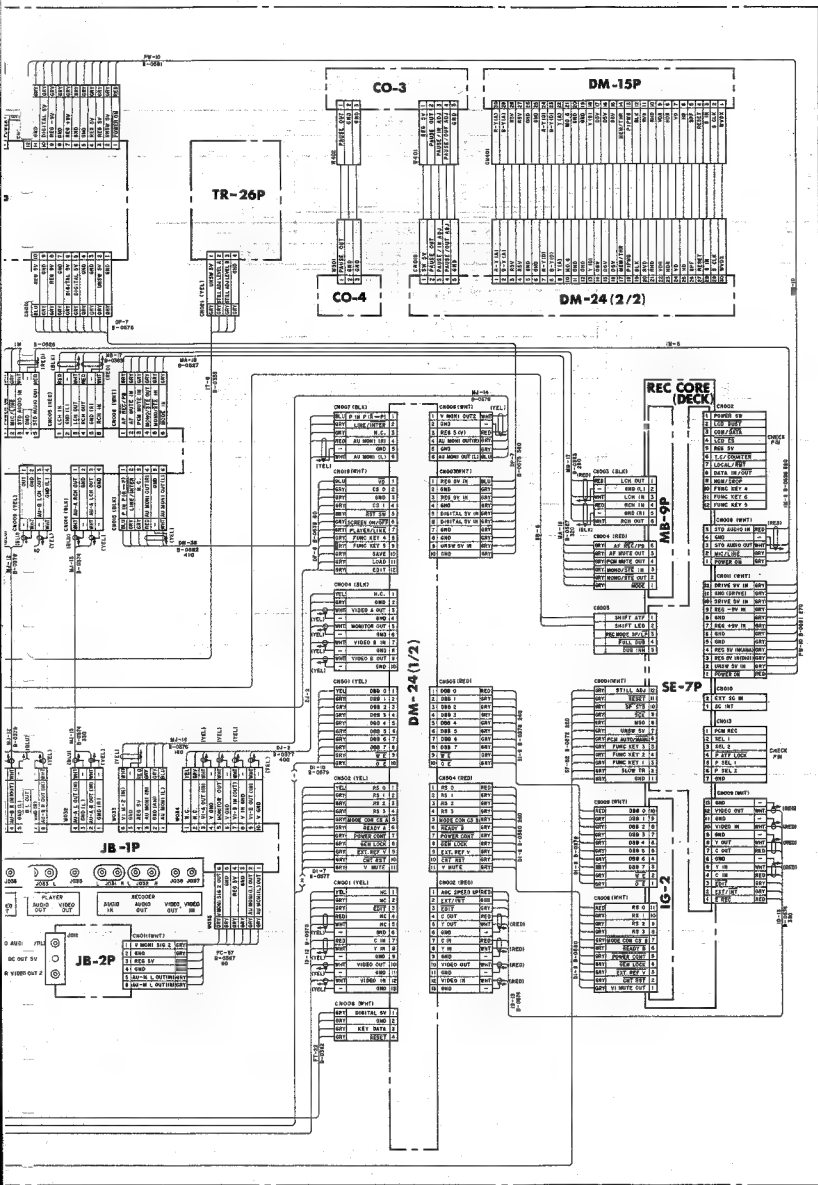


SECTION 4 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

4-1. FRAME SCHEMATIC DIAGRAM





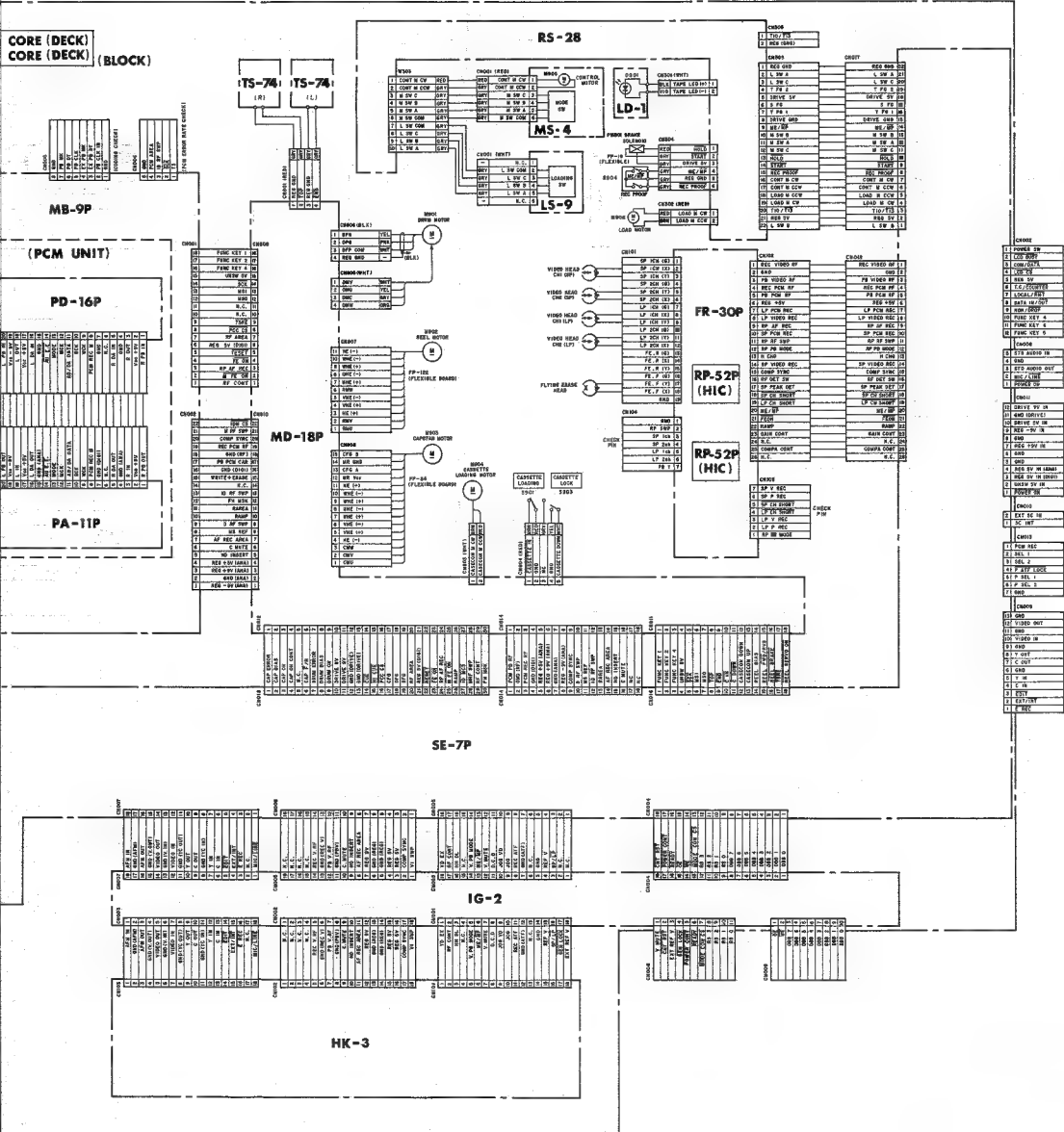


REC CORE (DECK)
PB CORE (DECK)

CHORD (DECK)
LXZ OUT 1
LXZ OUT 2
LXZ OUT 3
LXZ OUT 4
LXZ OUT 5
LXZ OUT 6
LXZ OUT 7
LXZ OUT 8
LXZ OUT 9
LXZ OUT 10
LXZ OUT 11
LXZ OUT 12
LXZ OUT 13
LXZ OUT 14
LXZ OUT 15
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CHORD (DECK)
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LXZ OUT 98
LXZ OUT 99
LXZ OUT 100

CORE (DECK)
CORE (DECK) (BLOCK)



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- — : Indicates a lead wire mounted on the component side.
- — : Indicates a lead wire mounted on the printed side.
- Pattern from the side which enables seeing.
- Circled numbers refer to waveforms.
- ⊗ : Through hole.
- Pattern of the rear side.

Caution:

Pattern face side: Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the pattern face are indicated.

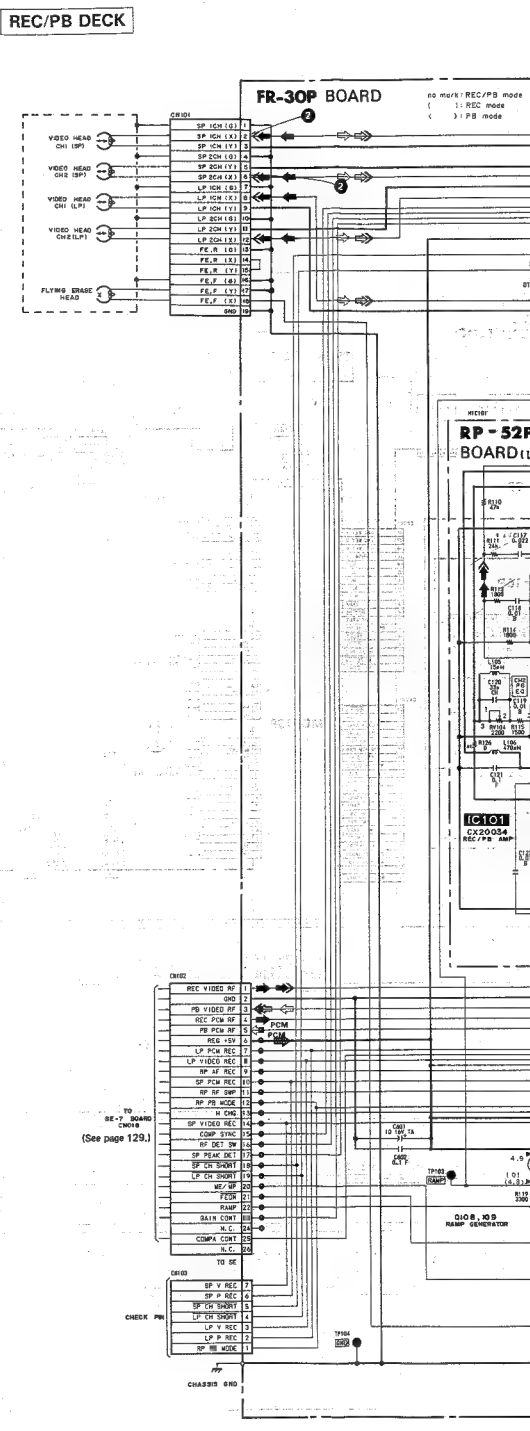
For schematic diagram:

- Caution when replacing chip parts.
- New parts must be attached after removal of chip.
- Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
- kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- nonflammable resistor.
- fusible resistor.
- panel designation.
- Δ: Internal component.
- adjustment for repair.
- B+ line.
- B- line.
- Voltages are dc between measurement points and ground unless otherwise noted.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- IN/OUT direction of B line (+, -).
- Impossible to measure the voltage at the marked points.
- Circled numbers refer to waveforms.

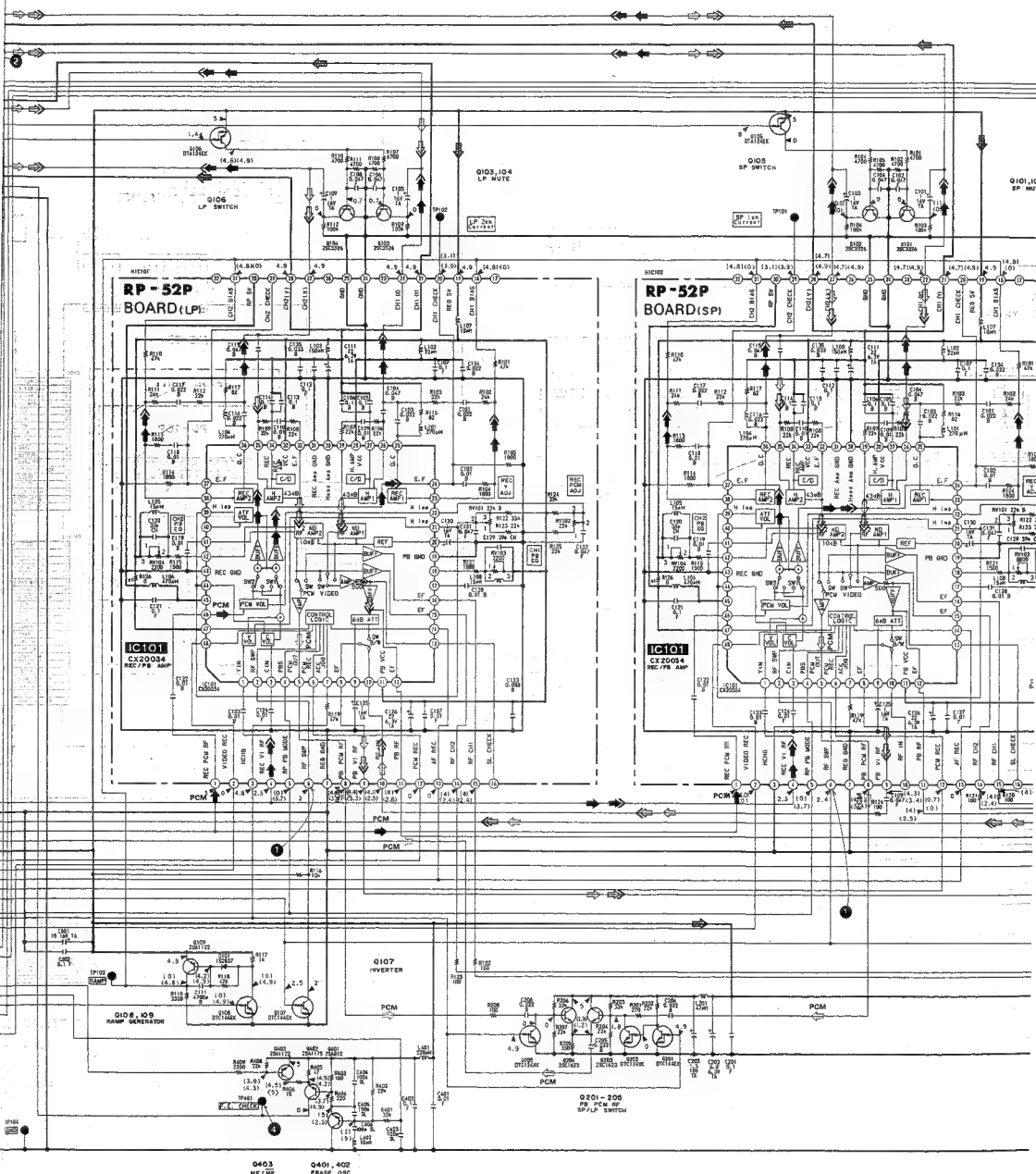
When indicating parts by reference number, please include the board name.

Note: The components identified by mark A or dotted line with mark A are critical for safety. Replace only with part number specified.

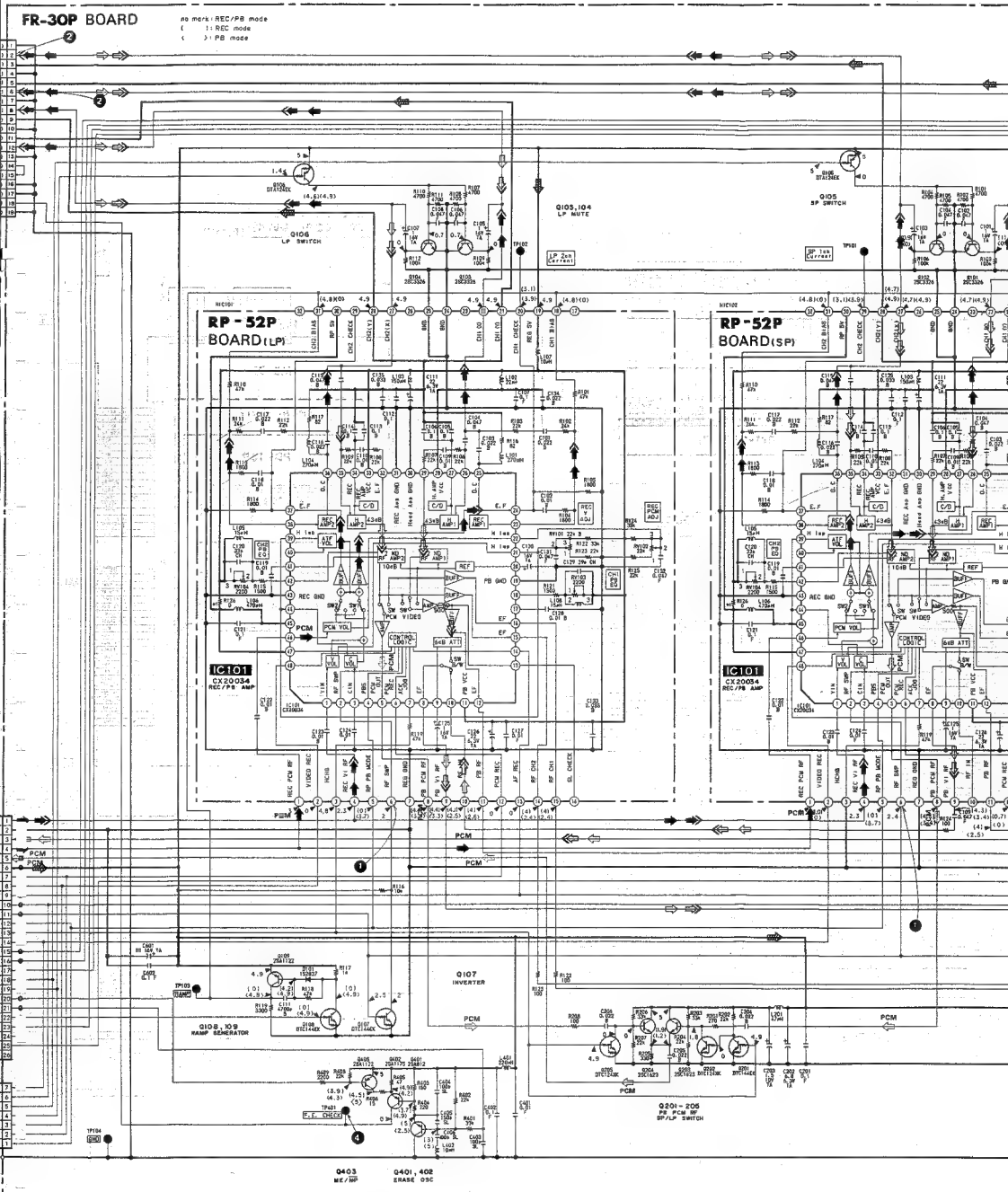
FR-30P (HEAD AMP/FLYING ERASE), RP-52P (REC/PB HEAD AMP) SCHEMATIC DIAGRAM
- Ref. No. FR-30P BOARD: 1,000 series, RP-52P BOARD: 10,000 series -

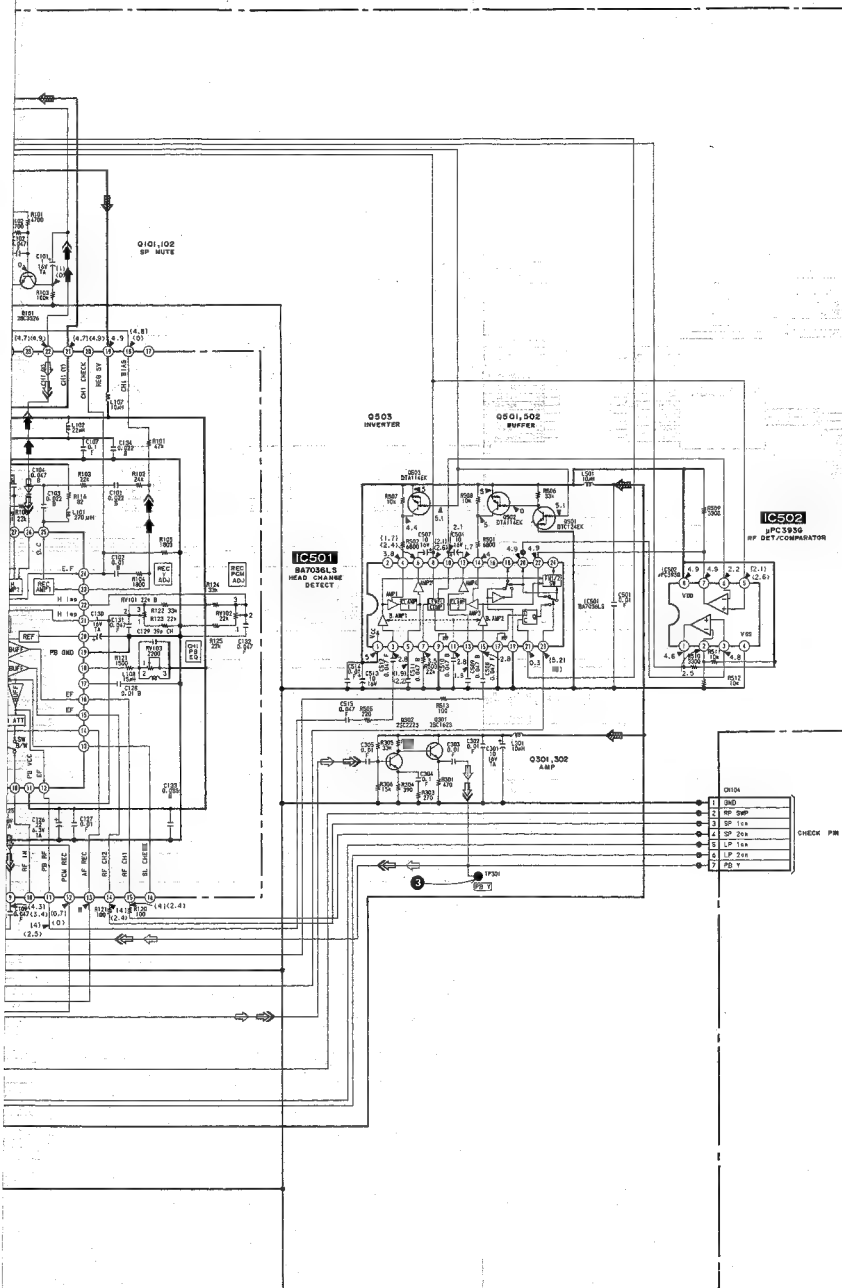


```
no mark: REC/PB mode
(    ): REC mode
<    ): PB mode
```

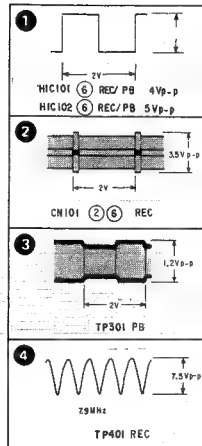


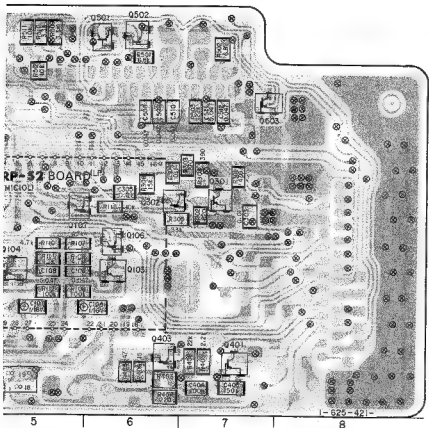
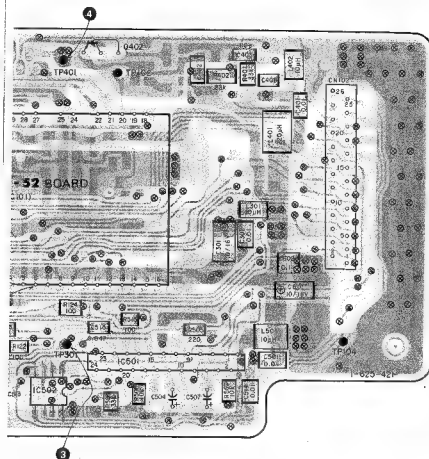
RP-52P (REC/PB HEAD AMP) SCHEMATIC DIAGRAM
BOARD: 10,000 series -



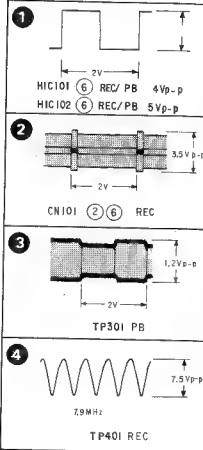


FR-30P BOARD





FR-30P BOARD



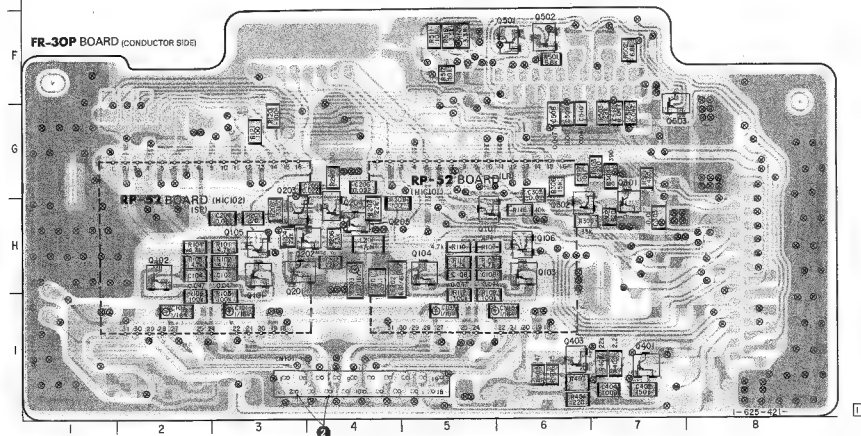
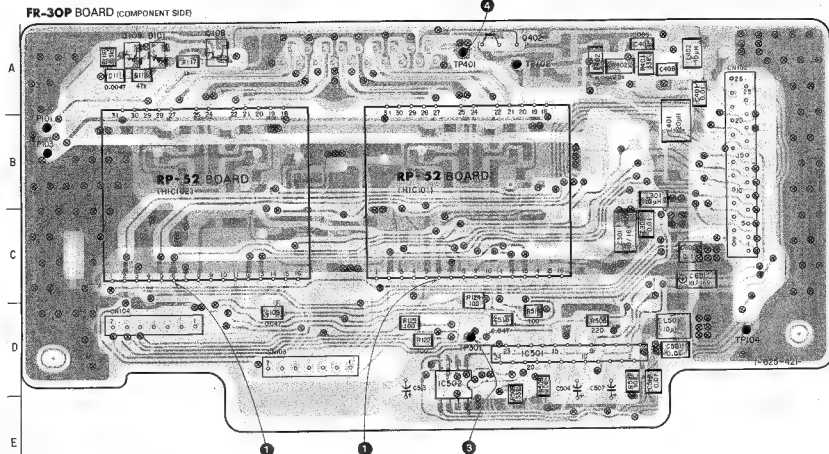
AD AMP/FLYING ERASE). RP-52P (REC/PB HEAD AMP) PRINTED WIRING BOARDS

R-30P BOARD: 1,000 series, RP-52P BOARD: 10,000 series —

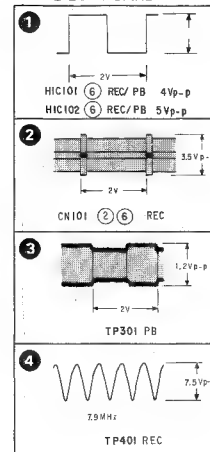
B DECK

FR-30P BOARD

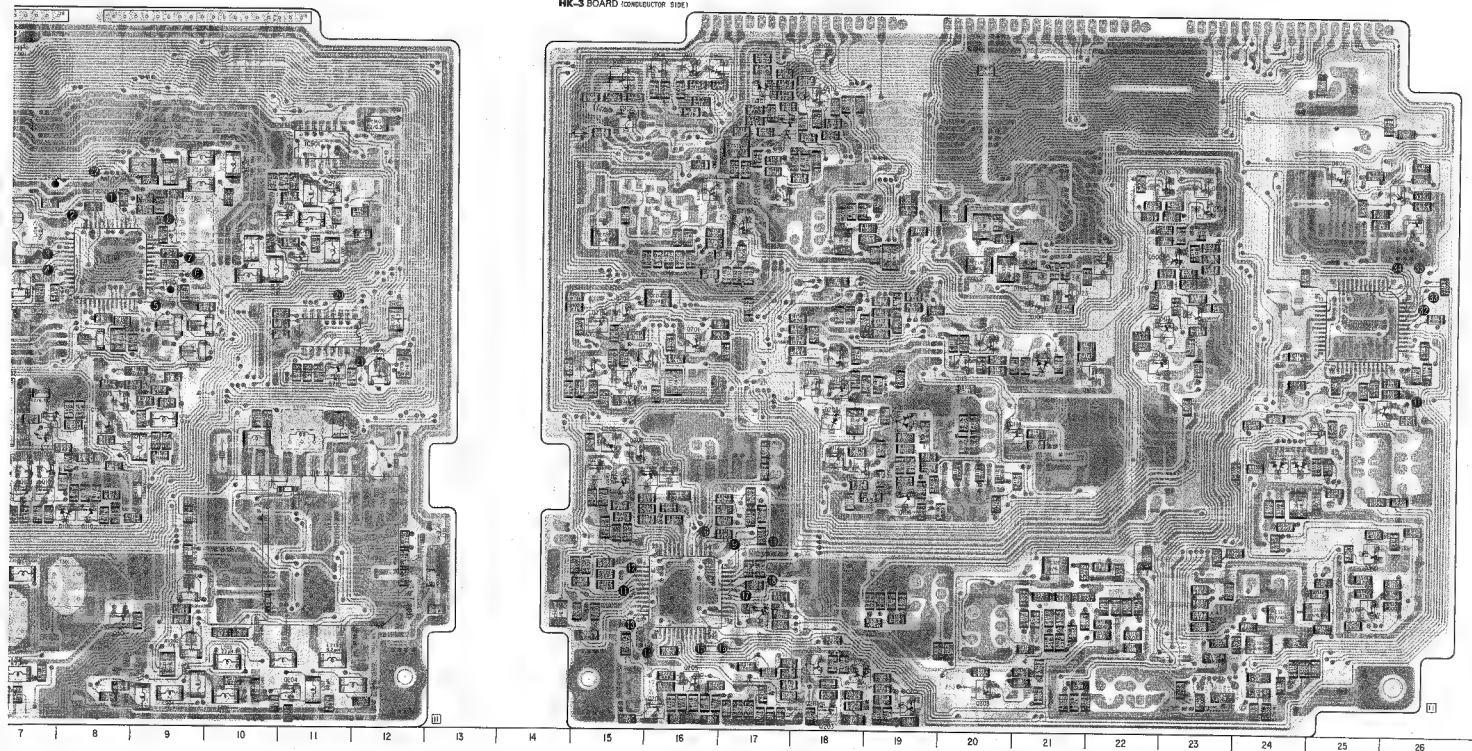
CN101	I-3
CN102	A-1
CN103	D-3
CN104	D-2
D101	A-2
IC501	D-6
IC502	D-5
Q101	H-3
Q102	H-2
Q103	H-6
Q104	H-5
Q105	H-3
Q106	H-4
Q107	H-5
Q108	A-3
Q109	A-2
Q201	H-3
Q202	H-3
Q203	G-3
Q204	H-4
Q205	H-4
Q301	G-7
Q502	H-6
Q503	F-1
Q402	A-5
Q403	I-6
Q501	F-6
Q502	F-6
Q503	G-7
B1-1	B-1
TP1-02	B-1
TP1-03	A-6
TP1-04	A-6
TP3-01	D-5
TP4-01	A-6



FR-30P BOARD



HK-3 BOARD (CONDUCTOR SIDE)



HK-3 (Y/C VIDEO PROCESS) PRINTED WIRING BOARD

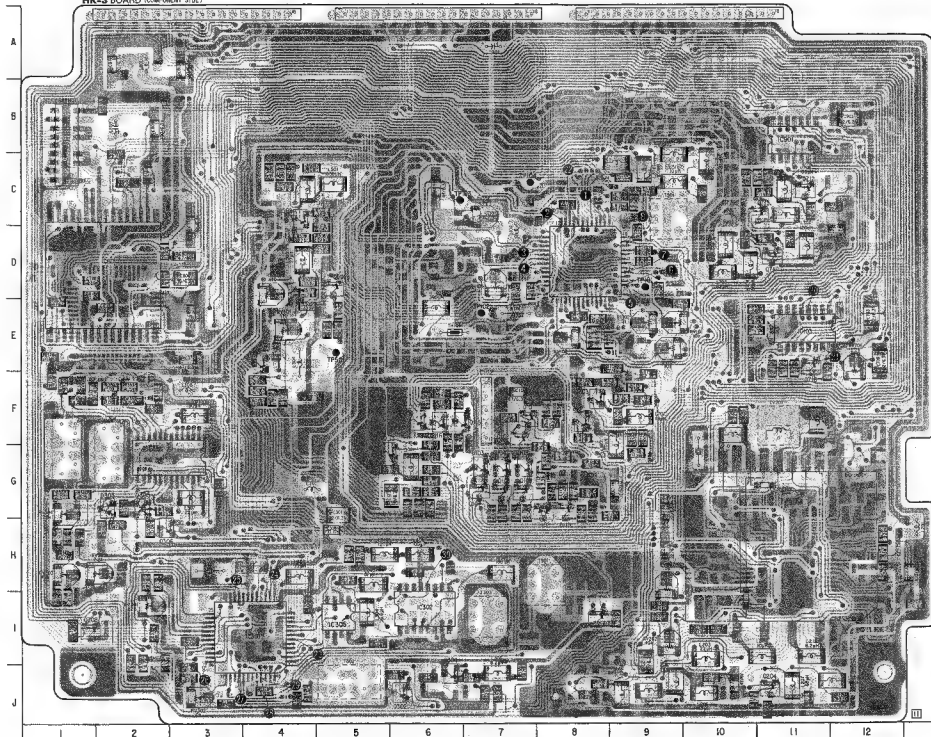
Ref. No. HK-3 BOARD: 2,000 series -

REC/PB DECK

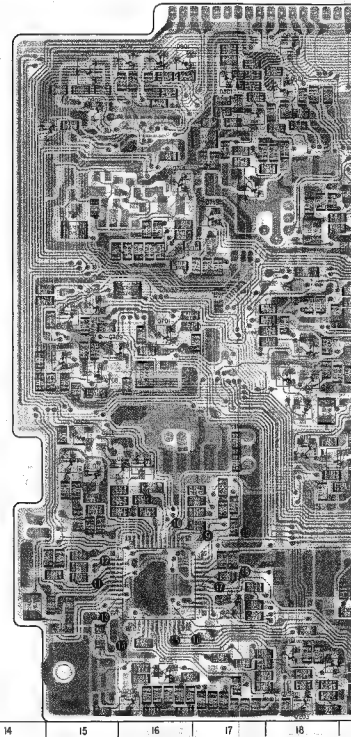
HK-3 BOARD

N101	A-9	G501	C-23
N102	A-6	G502	C-4
N103	A-3	G503	E-23
		G504	E-4
DV301	H-4	G505	C-23
		G506	D-23
I101	F-19	G507	F-23
I102	G-8	G508	D-5
I103	E-21	G509	E-22
D104	D-21	G510	B-18
D105	D-21	G511	B-17
N201	I-18	G512	C-17
202	F-15	G513	C-22
I303	F-18	G701	E-16
301	G-24	G702	E-15
D302	G-24	G703	F-8
D303	G-2	G704	F-18
304	F-25	G705	F-18
301	G-2	G707	E-15
301	C-25	G708	F-15
301	A-18	G709	E-15
202	A-18	G710	C-17
		G711	D-11
I101	D-8	G712	C-11
I102	E-7	G713	C-11
I103	E-11	G714	C-16
201	H-16	G718	E-11
IC301	H-4	G719	E-15
IC302	G-6	G801	C-25
303	E-25	G802	C-25
304	G-3	G901	A-15
305	G-5	G902	B-15
IC501	D-8	G903	A-16
IC501	B-11	G904	A-16
		G905	B-15
201	F-11		
		RV101	E-9
I01	F-7	RV102	E-9
I102	F-7	RV103	E-8
Q103	G-7	RV104	E-9
I104	G-7	RV106	D-7
I05	G-7	RV107	C-7
I06	C-20	RV201	H-9
I107	G-7	RV202	I-9
I108	G-7	RV301	I-2
I109	G-7	RV302	J-3
I10	G-8	RV303	H-1
I11	G-18	RV304	O-1
I12	G-18	RV305	H-2
Q113	G-8	RV501	A-4
Q114	F-20	RV502	D-4
O115	F-7	RV701	E-12
I16	F-6		
I17	F-6	TP101	D-9
I18	E-18	TP102	E-7
Q119	E-20	TP103	C-6
Q120	E-20	TP104	C-7
I21	F-4	TP301	D-7
I22	E-21		
I23	E-21		
I24	D-22		
Q201	I-19		
Q202	I-18		
203	J-18		
204	I-11		
I05	J-16		
Q06	J-16		
Q207	G-16		
Q208	G-15		
I09	G-16		
I10	G-15		
I11	G-16		
Q212	I-17		
Q301	I-18		
Q302	J-6		
I03	J-20		
204	J-6		
I05	G-2		
Q306	I-2		
Q307	I-25		
I308	I-1		
I09	I-25		
I10	F-25		

HK-3 BOARD (COMPONENT SIDE)



HK-3 BOARD (CONDUCTOR SIDE)

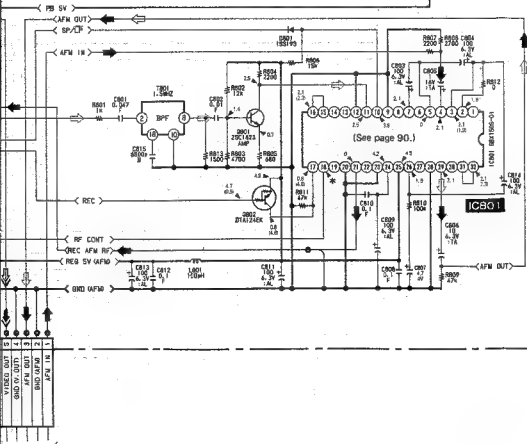
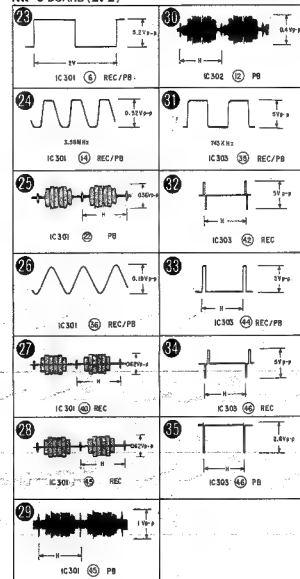


TO HE-3 BOARD (1/2) (See page 116.)



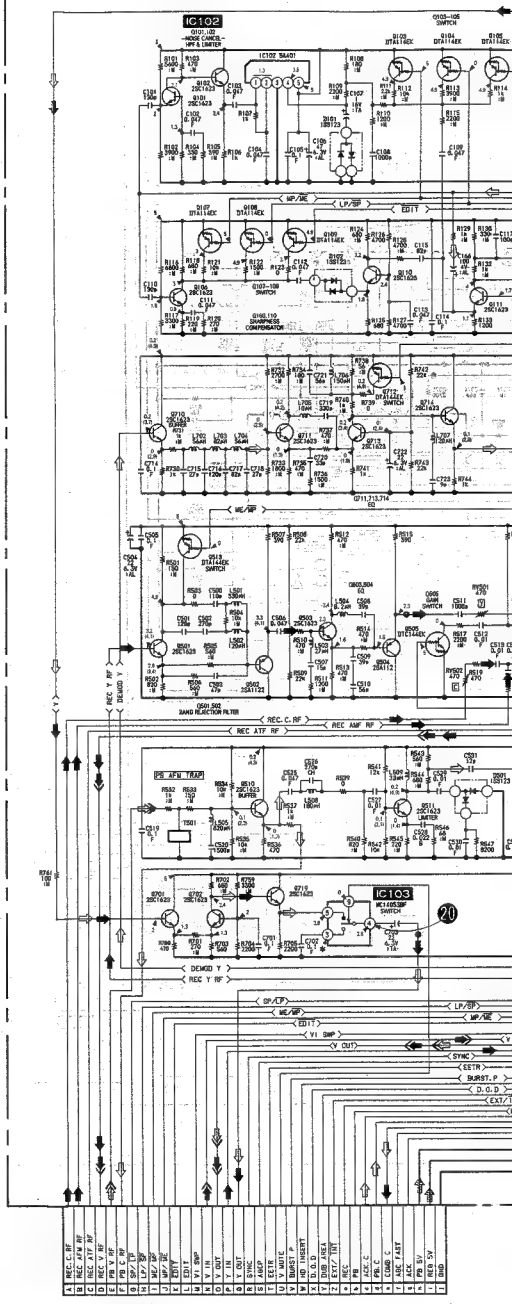




**HK-3 BOARD (2/2)**

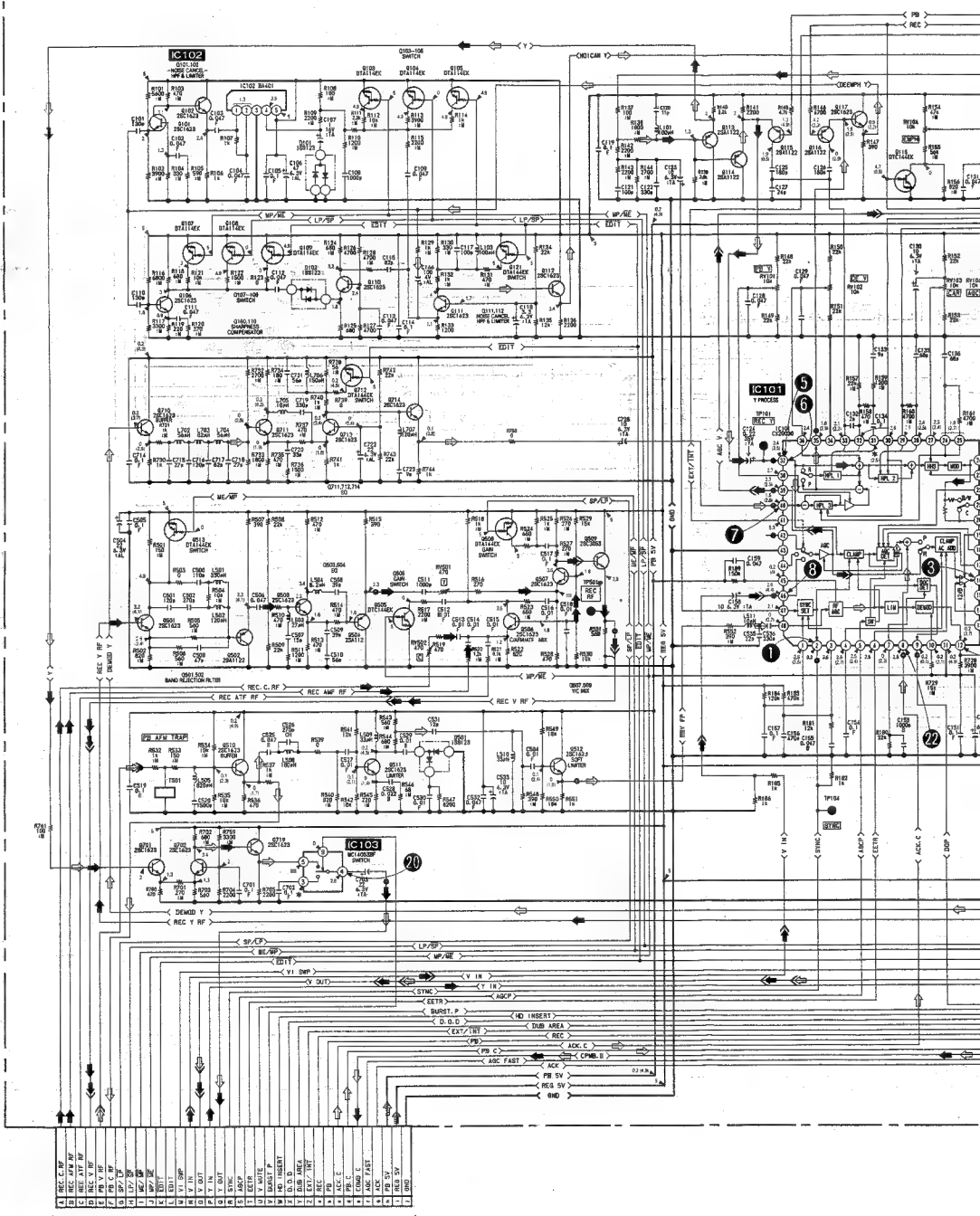
- ➡ : REC Y/CHROMA Signal
- ⇄ : PB Y/CHROMA Signal
- ➡ : REC Y Signal
- ⇄ : PB Y Signal
- ➡ : REC CHROMA Signal
- ⇄ : PB CHROMA Signal
- ➡ : REC AUDIO Signal
- ⇄ : PB AUDIO Signal

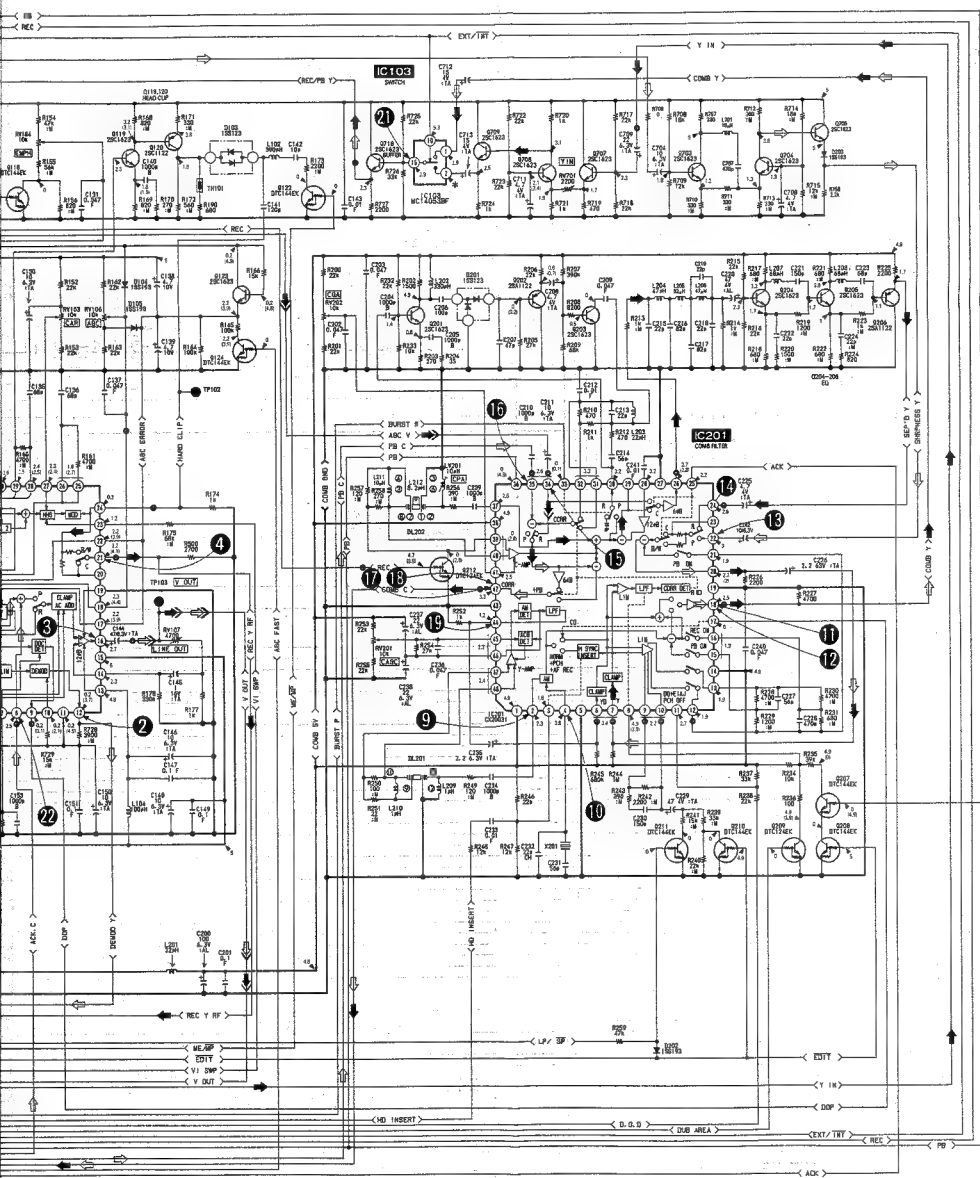
- HK-3 BOARD(1/2)**





HK-3 BOARD(1/2)





7B (SERVO) AND 1C-2 (TERMINAL) PRINTED WIRING BOARDS

Ref. No. SE-7P BOARD: 3.000 and IG-2 BOARD: 3.100 series —

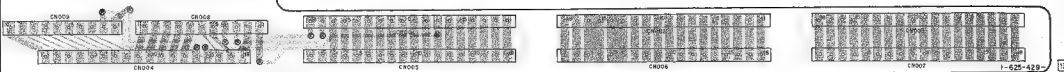
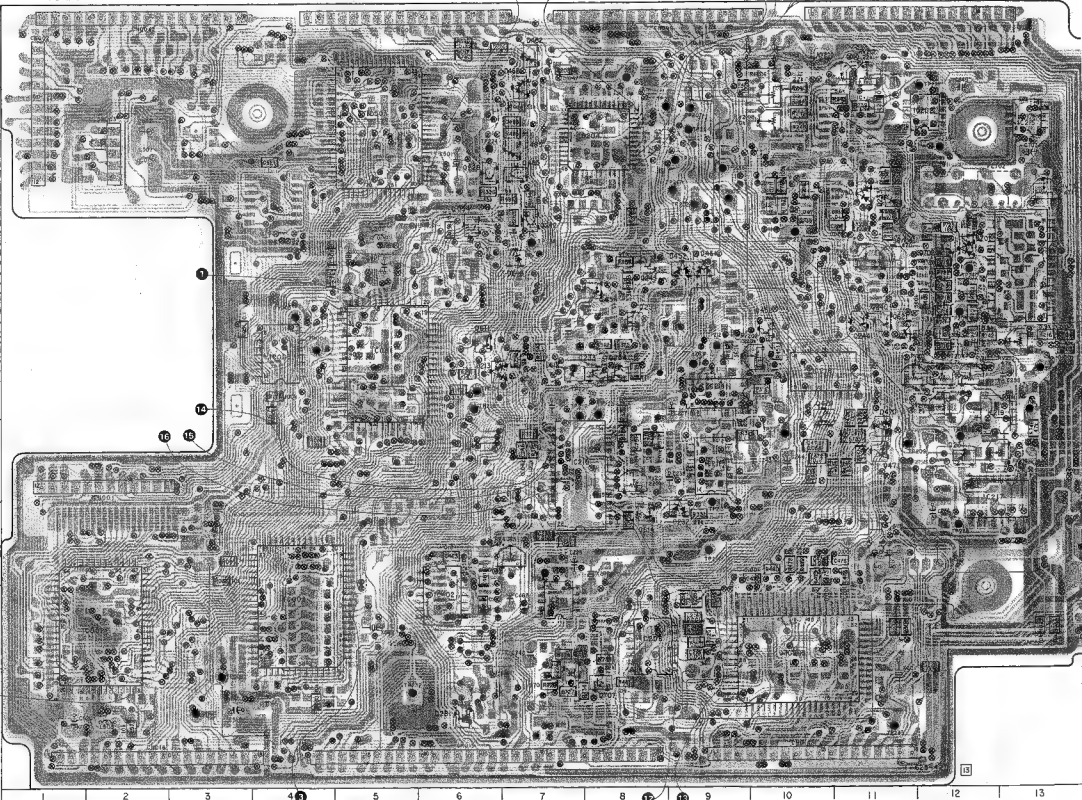
00001	F2
00002	A1
00003	A2
00004	A6
00005	A6
00007	A1
00008	B15
00009	B15
00010	F15
00011	F15
00012	F15
00013	F15
00014	F15
00015	F15
00016	F15
00017	G27
00018	H
D001	
D001	E23
D002	E23
D003	E23
D004	E23
D005	E23
D006	E23
D007	E23
D008	E23
D009	E23
D010	E23
D011	E23
D012	E23
D013	E23
D014	E23
D015	E23
D016	E23
D017	E23
D018	E23
D019	E23
D020	E23
D021	E23
D022	E23
D023	E23
D024	E23
D025	E23
D026	E23
D027	E23
D028	E23
D029	E23
D030	E23
D031	E23
D032	E23
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D034	E23
D035	E23
D036	E23
D037	E23
D038	E23
D039	E23
D040	E23
D041	E23
D042	E23
D043	E23
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D170	E23
D171	E23
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D175	E23
D176	E23
D177	E23
D178	E23
D179	E23
D180	E23
D181	E23
D182	E23
D183	E23
D184	E23
D185	

Q451	D-19
Q452	D-10
Q453	D-19
Q454	O-8
Q455	D-21
Q461	I-20
Q462	F-16
Q463	F-16
Q470	E-10
Q471	F-11
Q485	C-7
Q501	B-26
Q611	E-6
Q614	G-8
Q620	B-21
Q621	D-11
Q702	C-12
Q704	E-17
Q705	I-22
Q706	I-21
Q707	I-8
Q708	I-21
Q709	C-16
Q710	D-16
Q717	I-7
RV201	F-8
RV202	E-10
RV203	E-12
RV204	E-12
RV205	A-11
RV206	B-10
RV207	A-11
RV208	B-10
RV210	E-13
RV212	F-13
RV215	E-12
RV216	E-12
RV217	D-11
RV218	D-11
RV401	G-7
RV701	C-13

TP001	E-4/E-24
TP003	1-3/4-25
TP004	E-6/E-22
TP005	D-4/D-28
TP201	A-8/A-20
TP202	C-9/C-20
TP203	C-9/C-19
TP204	B-9/B-20
TP207	B-9/B-20
TP208	D-12/D-18
TP209	F-11/F-11
TP212	E-9/E-19
TP213	G-9/G-19
TP214	G-9
TP215	B-9/B-20
TP216	B-9/B-20
TP217	C-9/C-20
TP218	E-6/E-22
TP219	E-7/E-21
TP221	E-7/E-21
TP223	E-8/E-21
TP225	1-3/4-26
TP227	E-13/E-17
TP228	C-10/C-17
TP229	F-10/F-17
TP230	E-13/E-17

TP251	07/C-22
TP292	1-5/F-23
TP296	C-9/C-19
TP237	9-12/B-17
TP238	9-12/G-16
TP239	9-12/B-17
TP240	D-12/D-16
TP241	G-7
TP242	F-12/F-16
TP243	1-11/F-17

—123—

IG-2 BOARD (COMPONENT SIDE)**SE-7P** BOARD (COMPONENT SIDE)

EVO-720P SERVO

—124—

16-2 BOARD (CONDUCTOR SIDE)

SE-7P BOARD (CONDUCTOR SIDE)

SERVO SERVO

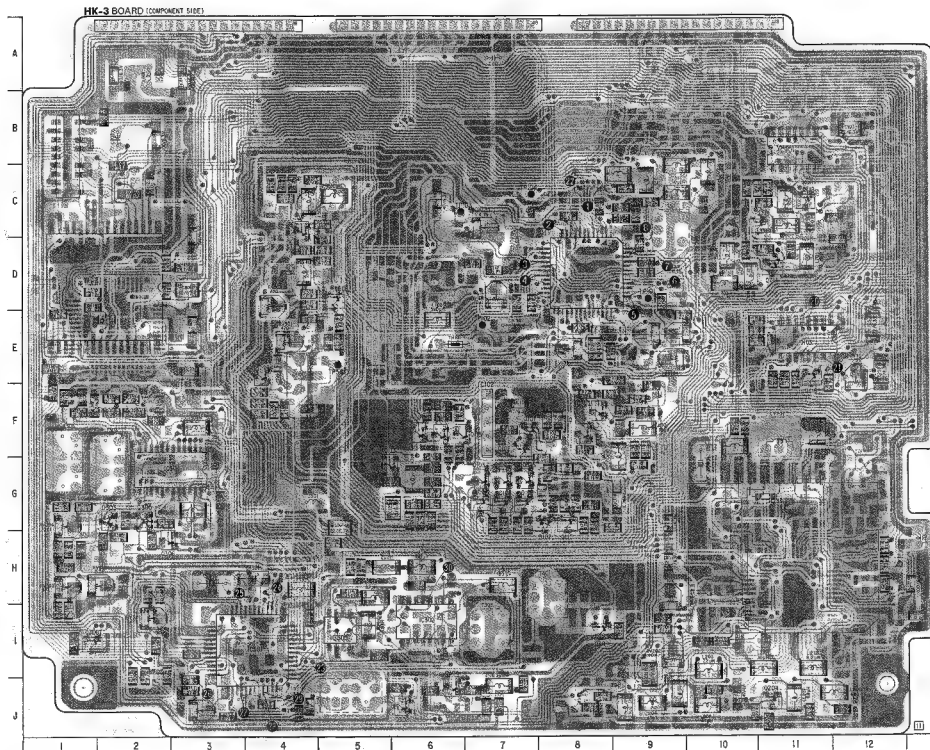
HK-3 (Y/C VIDEO PROCESS) PRINTED WIRING BOARDS

- Ref. No. HK-3 BOARD: 2,000 series -

REC/PB DECK

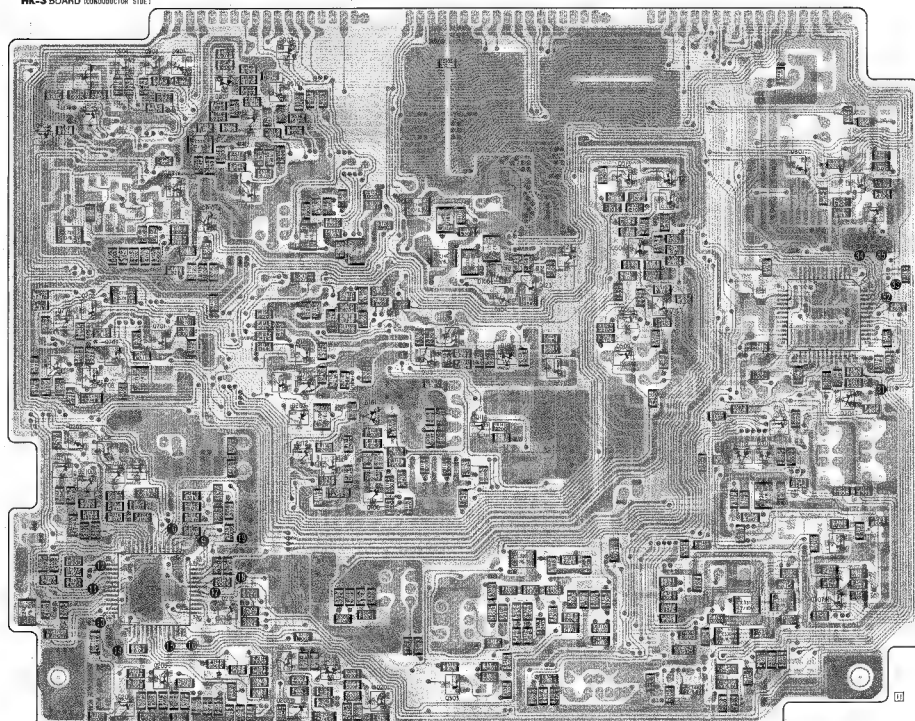
HK-3 BOARD

CN101	A-9	Q501	C-23
CN102	A-6	Q502	C-4
CN103	A-3	Q503	E-23
		Q504	E-4
CV301	H-4	Q506	C-23
		Q507	E-23
D101	F-19	Q508	D-23
D102	G-8	Q509	E-22
D103	E-21	Q510	B-18
D104	D-21	Q511	B-17
D105	D-21	Q512	C-17
D201	J-18	Q513	C-22
D202	F-15	Q701	E-16
D203	F-18	Q702	E-15
D301	G-24	Q703	F-8
D302	G-24	Q704	F-16
D303	G-2	Q705	F-18
D304	F-26	Q707	E-15
D501	B-17	Q708	F-15
D801	C-25	Q709	E-15
D801	A-16	Q710	C-17
D902	A-18	Q711	D-11
		Q712	C-11
IC101	D-8	Q713	C-11
IC102	E-7	Q714	C-16
IC103	E-11	Q715	C-11
IC201	H-16	Q716	E-15
IC301	I-4	Q719	E-15
IC302	I-4	Q801	C-25
IC303	E-25	Q802	C-25
IC304	G-3	Q901	A-15
IC305	I-5	Q902	B-15
IC801	D-2	Q903	A-16
IC901	B-11	Q904	A-16
		Q905	B-15
LV201	F-11		
		RV101	E-9
Q101	F-7	RV102	E-9
Q102	F-7	RV103	E-8
Q103	G-7	RV104	E-9
Q104	G-7	RV106	D-7
Q105	G-7	RV107	C-7
Q106	G-19	RV201	H-9
Q107	G-7	RV202	I-9
Q108	G-7	RV201	I-2
Q109	G-7	RV302	J-3
Q110	G-8	RV303	H-1
Q111	G-18	RV304	G-1
Q112	G-18	RV305	H-2
Q113	G-6	RV501	E-4
Q114	F-30	RV502	D-4
Q115	F-7	RV701	E-12
Q116	F-6		
Q117	F-6	TP101	D-9
Q118	E-18	TP102	E-7
Q119	E-20	TP103	D-6
Q120	E-20	TP104	C-7
Q121	F-8	TP501	E-5
Q122	E-21		
Q123	D-21		
Q124	D-22		
Q201	J-19		
Q202	I-18		
Q203	J-18		
Q204	J-11		
Q205	J-16		
Q206	J-16		
Q207	G-16		
Q208	G-15		
Q209	G-16		
Q210	G-15		
Q211	G-15		
Q212	I-17		
Q301	H-8		
Q302	J-6		
Q303	J-20		
Q304	J-6		
Q305	B-2		
Q306	H-2		
Q307	I-25		
Q308	I-1		
Q309	H-25		
Q310	F-25		



HK-3 BOARD (CONDUCTOR SIDE)



HK-3 BOARD (CONDUCTOR SIDE)

-121-

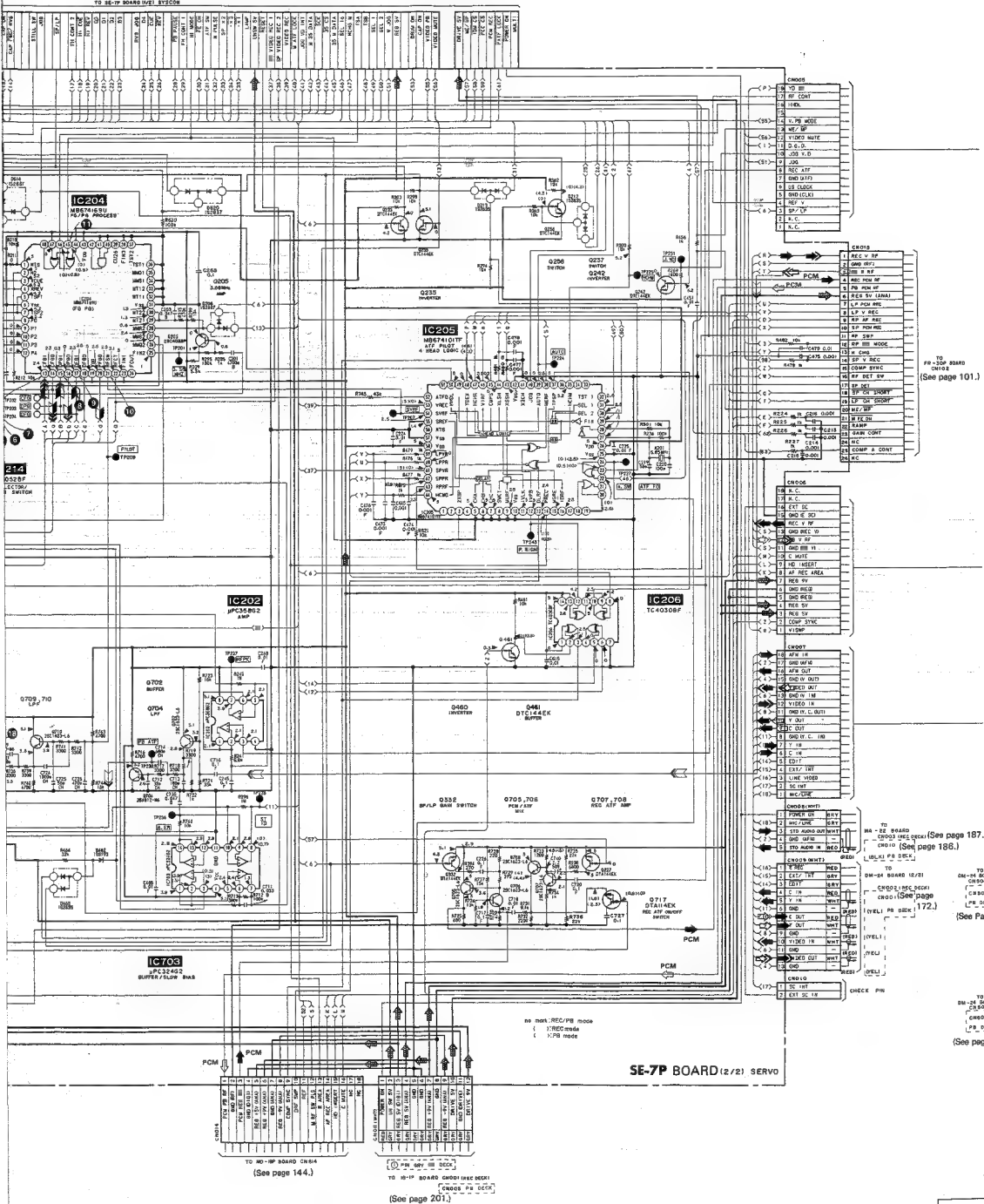
VIDEO VIDEO

-122-

TO SE-IP BOARD (1/2) SYSCOM

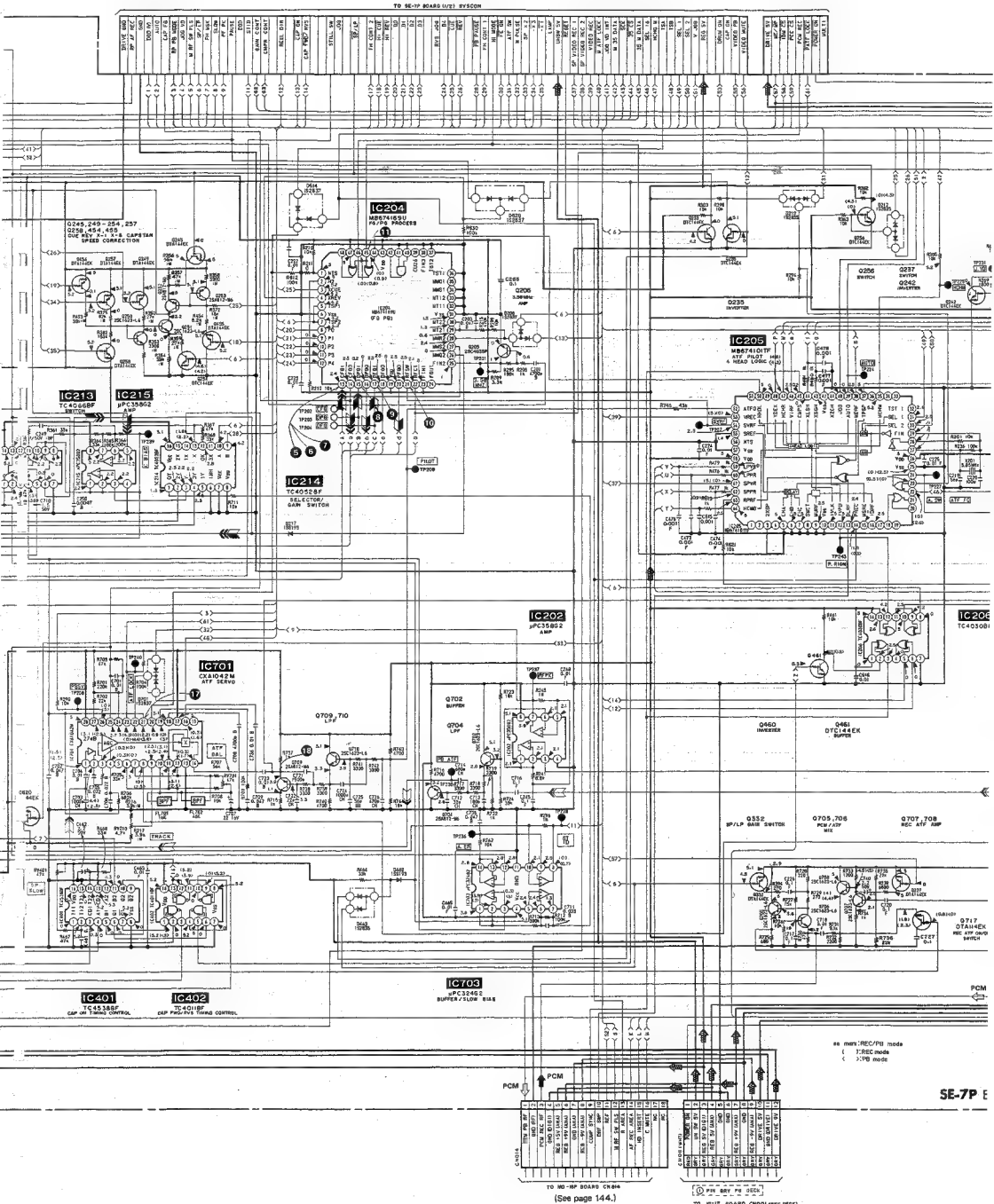


TR 35-77 20450 (4/E) BYJCM



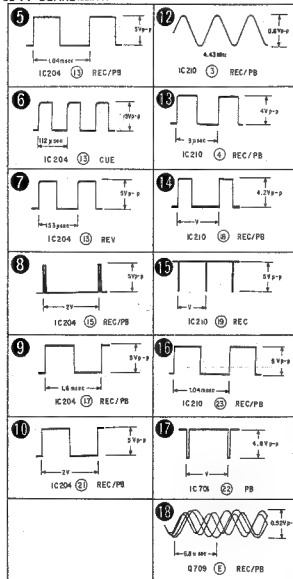
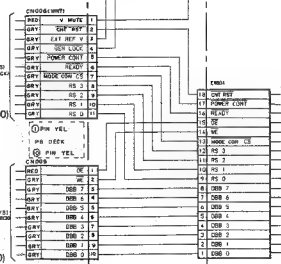
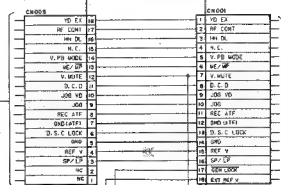
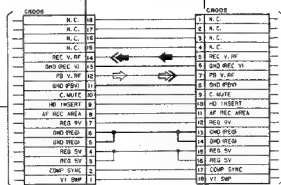
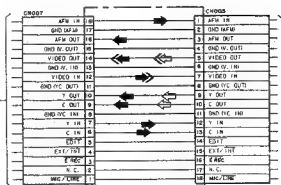
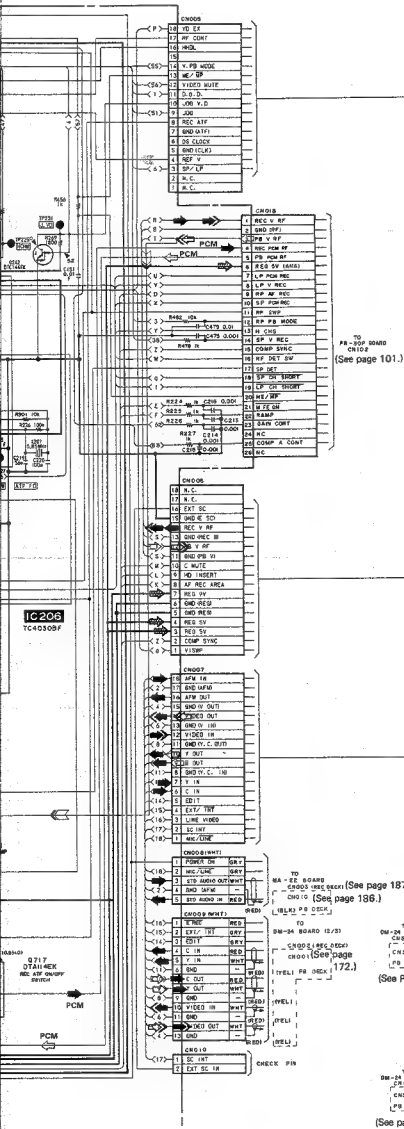
(See page 132.)

TO MC-1P BOARD (U12) BYWON













(See page 144.)

(See page 201.)



Signal path

	REC	REC/PB	PB
Drum speed servo			
Drum phase servo			
Drum servo (speed and phase)			
Capstan speed servo			
Capstan phase servo			
Capstan servo (speed and phase)			
Ref. signal			

- ➡ : REC Y/CHROMA Signal
- ➡ : PB Y/CHROMA Signal
- ➡ : REC Y Signal
- ➡ : PB Y Signal
- ➡ : REC CHROMA Signal
- ➡ : PB CHROMA Signal
- ➡ : REC AUDIO Signal
- ➡ : PB AUDIO Signal

(See page 113)

(See page 112)

TO
HR-3 BOARD

SE-77 TO BOARD (1/3)

(See page 133)

1000-7287-1000

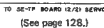
100

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—

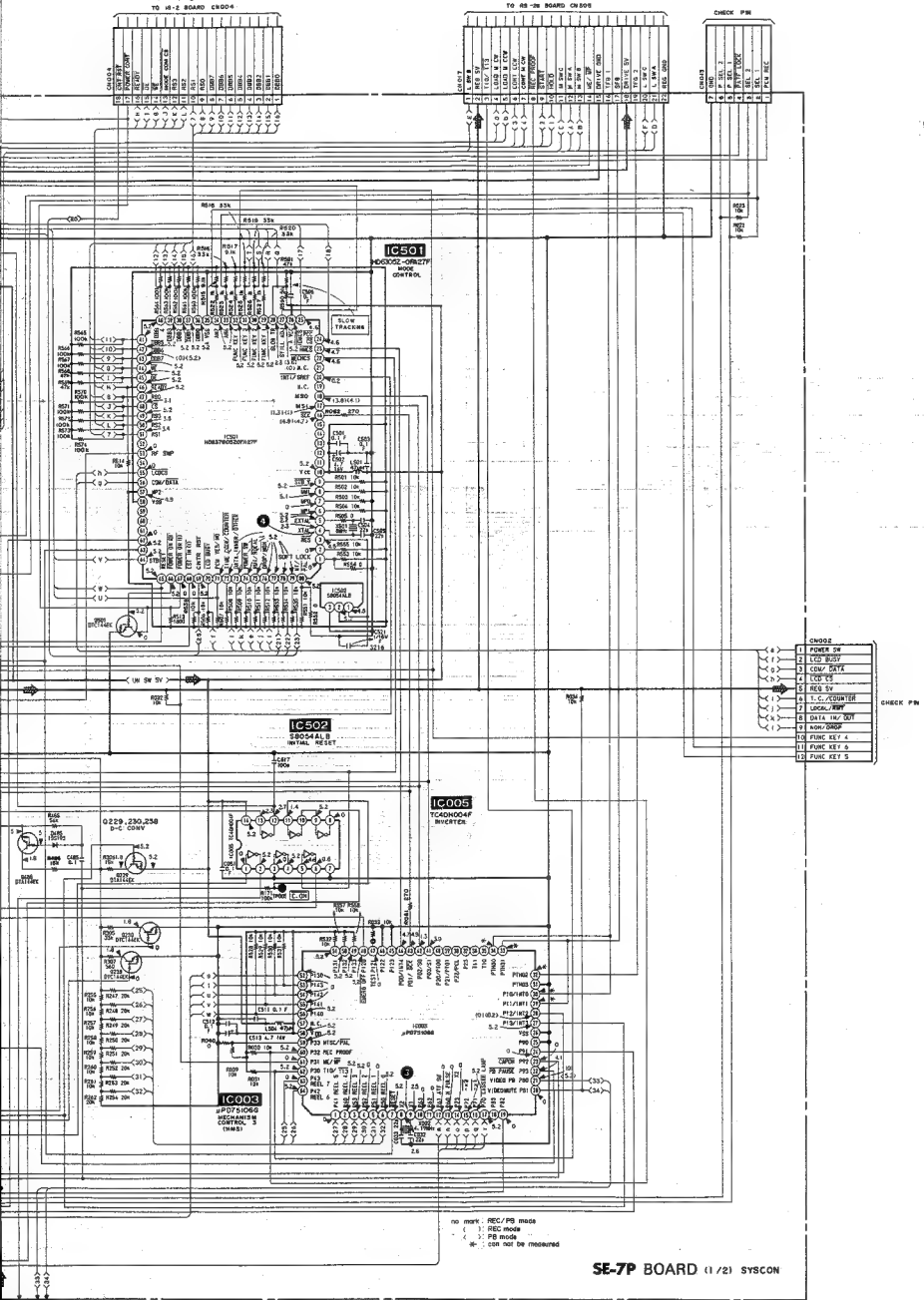
SE-7P BOARD (2/2) SERVO

IG-2 BOARD



(See page 130.)

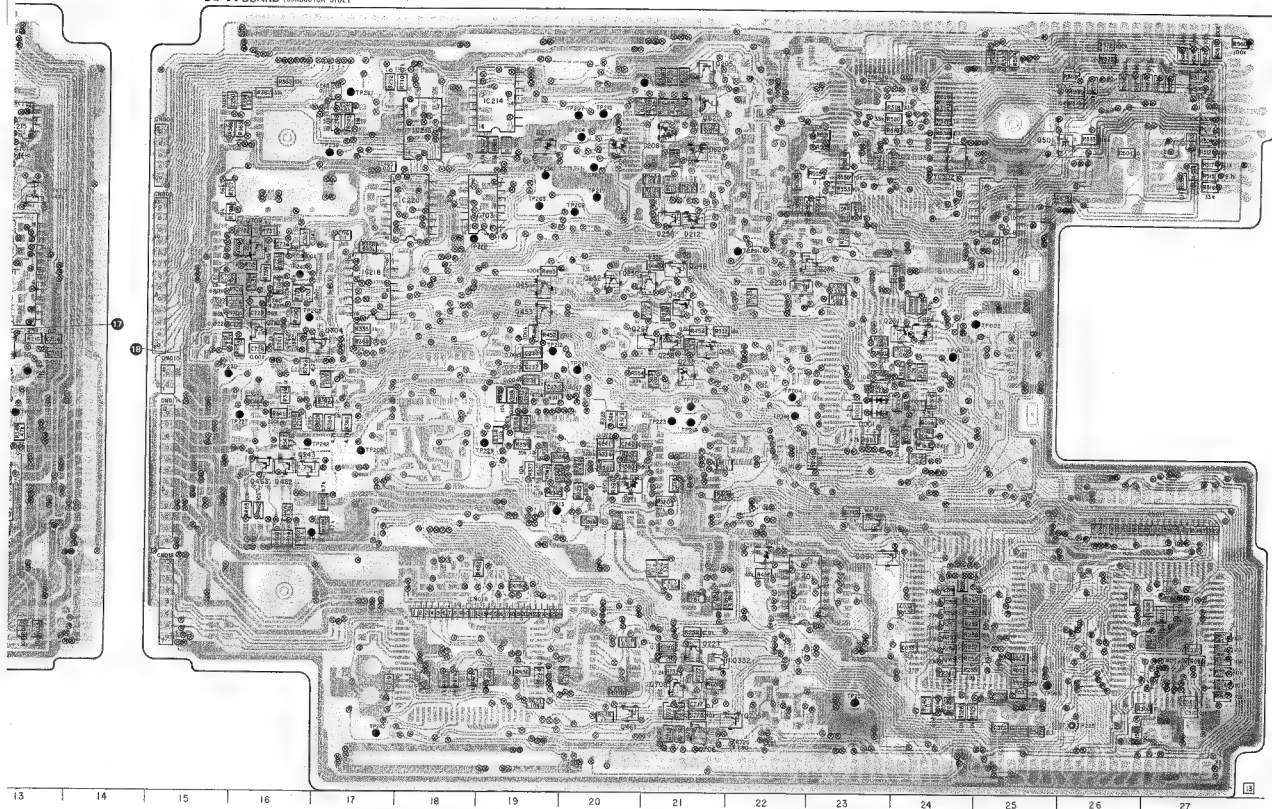
(See page 148.)



SE-7P BOARD (1/2) SYSCON

IG-2 BOARD (CONDUCTOR SIDE)

SE-7P BOARD (CONDUCTOR SIDE)



SYSTEM CONTROL SYSTEM CONTROL

REC/PB DECK

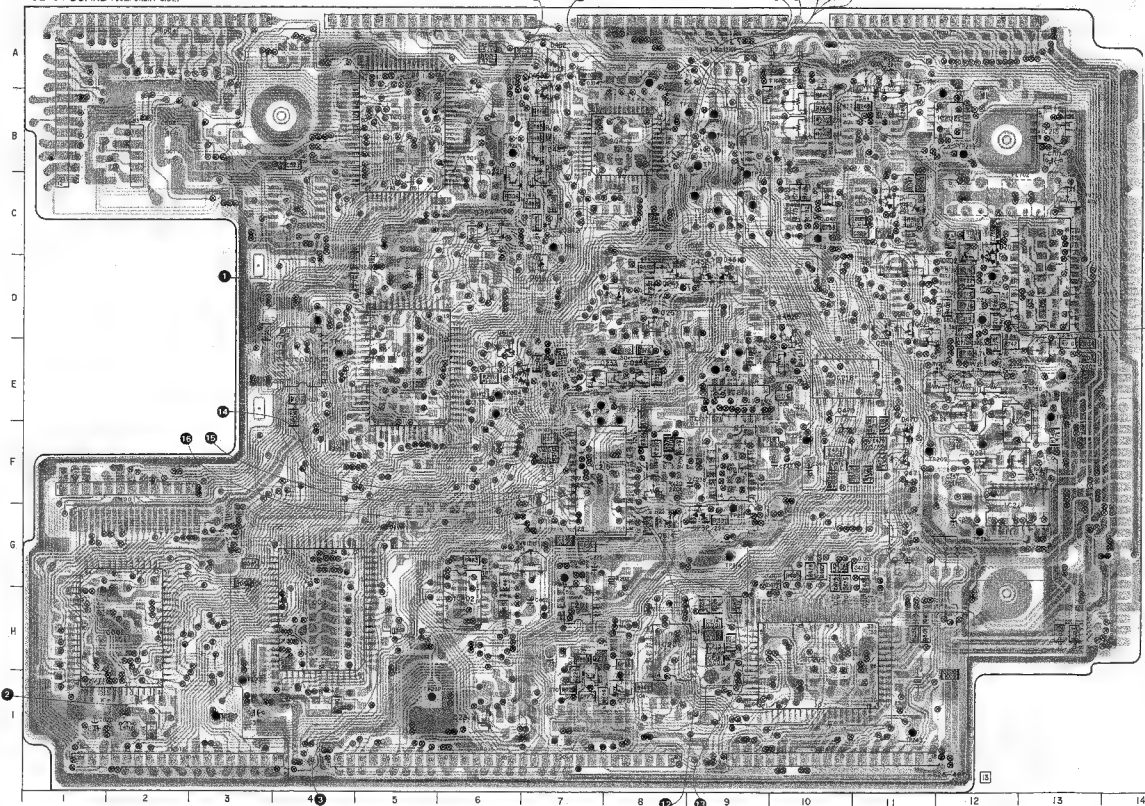
SE-7P BOARD

CH001 F-2	Q451 D-19
CH002 A-1	Q452 D-10
CH003 B-2	Q453 D-19
CH004 A-2	Q454 D-18
CH005 A-5	Q455 D-21
CH006 A-8	Q461 I-20
CH007 A-11	Q462 F-16
CH008 B-15	Q463 F-16
CH009 C-15	Q470 E-10
CH010 E-15	Q471 F-11
CH011 F-15	Q481 C-7
CH012 G-15	Q501 B-26
CH013 G-15	Q511 E-6
CH014 I-10	Q514 G-8
CH015 I-8	Q620 B-21
CH016 I-2	Q621 B-13
CH017 G-27	Q702 C-12
CH018 H-18	Q704 E-17
	Q705 I-22
D001 E-23	Q706 I-21
D108 B-21	Q707 E-12
D111 F-20	Q708 -I-21
D212 C-21	Q709 C-16
D113 E-6	Q710 D-16
D217 B-19	Q717 I-7
D224 D-24	
D231 F-12	RV201 F-8
D232 G-9	RV202 E-10
D333 D-11	RV203 E-12
D390 C-11	RV204 E-12
D451 D-9	RV205 A-11
D452 G-9	RV206 B-10
D462 A-7	RV207 A-11
D463 A-7	RV208 B-10
D470 F-11	RV210 E-13
D486 B-7	RV212 F-13
D611 G-22	RV216 E-12
D612 E-7	RV216 E-12
D613 D-7	RV216 E-12
D614 B-20	RV217 D-11
D620 B-21	RV218 D-11
D701 I-12	RV401 G-7
	RV701 C-13
IC001 E-5	TP001 E-4/E-24
IC002 H-2	TP003 I-31/25
IC003 H-4	TP004 E-6/E-22
IC004 C-25	TP005 D-4/D-25
IC005 E-4	TP001 A-8/A-20
IC001 H-7	TP002 G-6/G-20
IC002 B-12	TP003 G-9/G-19
IC004 B-8	TP004 B-9/B-20
IC005 H-10	TP007 B-9/B-20
IC206 H-8	TP008 D-10/D-16
IC210 F-7	TP009 F-11/F-17
IC211 E-9	TP012 E-9/E-19
IC212 F-9	TP013 G-9/G-19
IC213 B-18	TP214 G-9
IC214 B-19	TP215 B-9/B-20
IC215 B-13	TP216 B-9/B-20
IC216 E-10	TP217 C-8/C-20
IC217 Q-12	TP218 E-6/E-22
IC218 D-17	TP219 E-7/E-21
IC219 F-13	TP221 E-7/E-21
IC220 C-16	TP223 E-6/E-21
IC401 G-22	TP225 I-3/E-16
IC402 H-6	TP226 C-10/C-16
IC501 B-5	TP227 E-13/E-16
IC502 B-54	TP228 C-10/C-16
IC701 C-13	TP229 F-10/F-19
IC703 B-18	TP230 E-13/E-15
	TP231 C-7/C-22
Q004 C-6	TP232 I-31/23
Q005 G-23	TP233 C-8/C-20
Q001 G-23	TP237 B-12/B-17
Q005 A-71	TP238 G-12/G-17
Q227 H-21	TP239 B-12/B-17
Q229 C-6	TP240 D-12/D-16
Q230 D-22	TP241 E-6/E-21
Q231 D-24	TP242 F-12/F-16
Q233 E-8	TP243 I-11/I-17
Q235 E-21	
Q236 D-22	
Q240 D-11	
Q242 C-7	
Q243 F-16	
Q244 D-11	
Q246 D-8	
Q249 D-21	
Q250 D-21	
Q251 D-6	
Q252 D-20	
Q253 E-21	
Q254 E-8	
Q256 C-21	
Q257 D-21	
Q258 E-21	
Q332 H-21	

IG-2 BOARD (COMPONENT SIDE)



SE-7P BOARD (COMPONENT SIDE)



REC/PB DECK

MD-18P BOARD

CH801 D-9
CH803 D-10
CH804 D-8
CH805 C-6
CH806 C-4
CH807 B-8
CH808 C-6
CH809 D-6
CH810 D-5
CH811 A-10
CH812 A-6
CH814 A-2

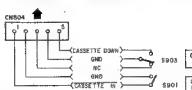
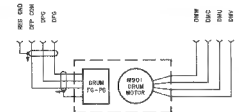
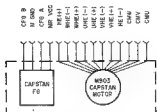
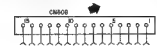
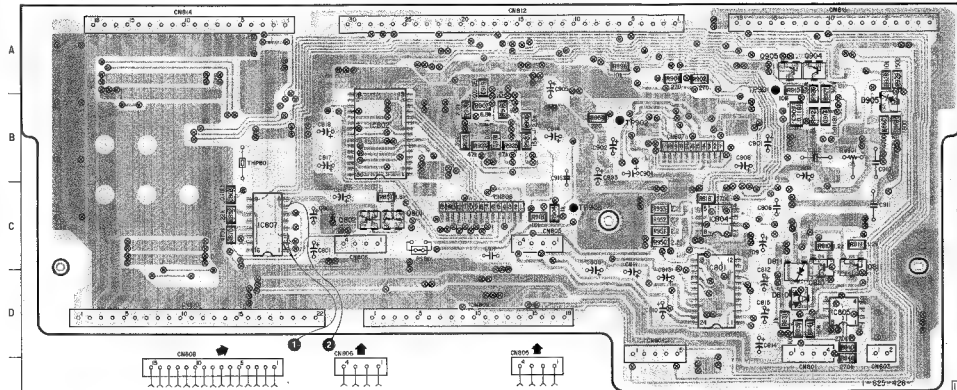
D803 I-4
D810 D-9
D811 D-9
U901 J-6
U902 J-9
U903 J-9
U904 H-6
U905 B-10

IC801 D-8
IC802 B-5
IC804 C-8
IC805 D-10
IC806 H-10
IC807 C-3
IC801 I-8
IC802 I-6
IC803 I-9
IC804 I-6

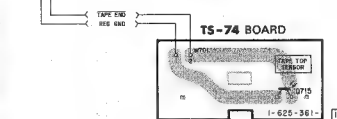
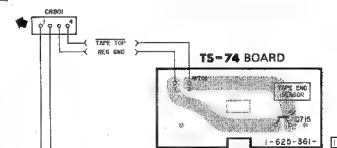
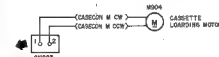
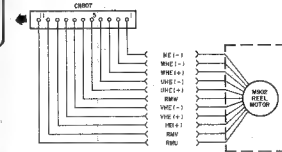
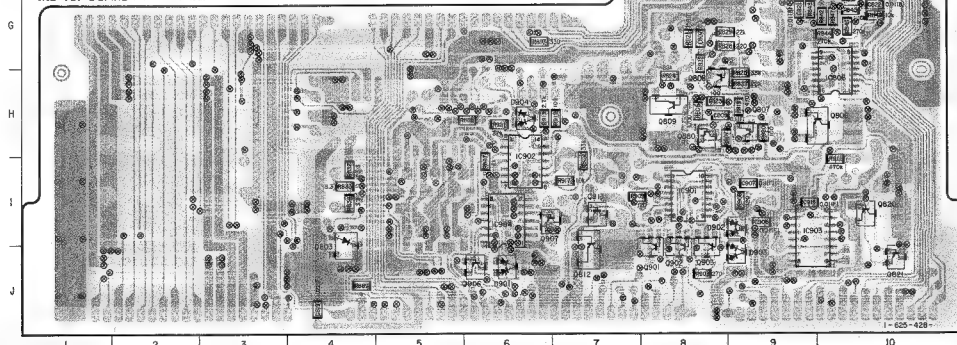
Q801 C-5
Q802 C-4
Q806 H-10
Q807 H-9
Q808 H-8
Q809 H-8
Q810 D-10
Q811 C-10
Q812 J-7
Q813 I-7
Q820 I-10
Q821 J-10
Q880 H-8
Q901 J-8
Q902 J-8
Q903 J-8
Q904 A-10
Q905 A-9
Q906 J-6
Q907 I-6

RV901 B-10
TP901 A-9
TP902 B-7
TP903 C-7

MD-18P BOARD (COMPONENT SIDE)



MD-18P BOARD (CONDUCTOR SIDE)



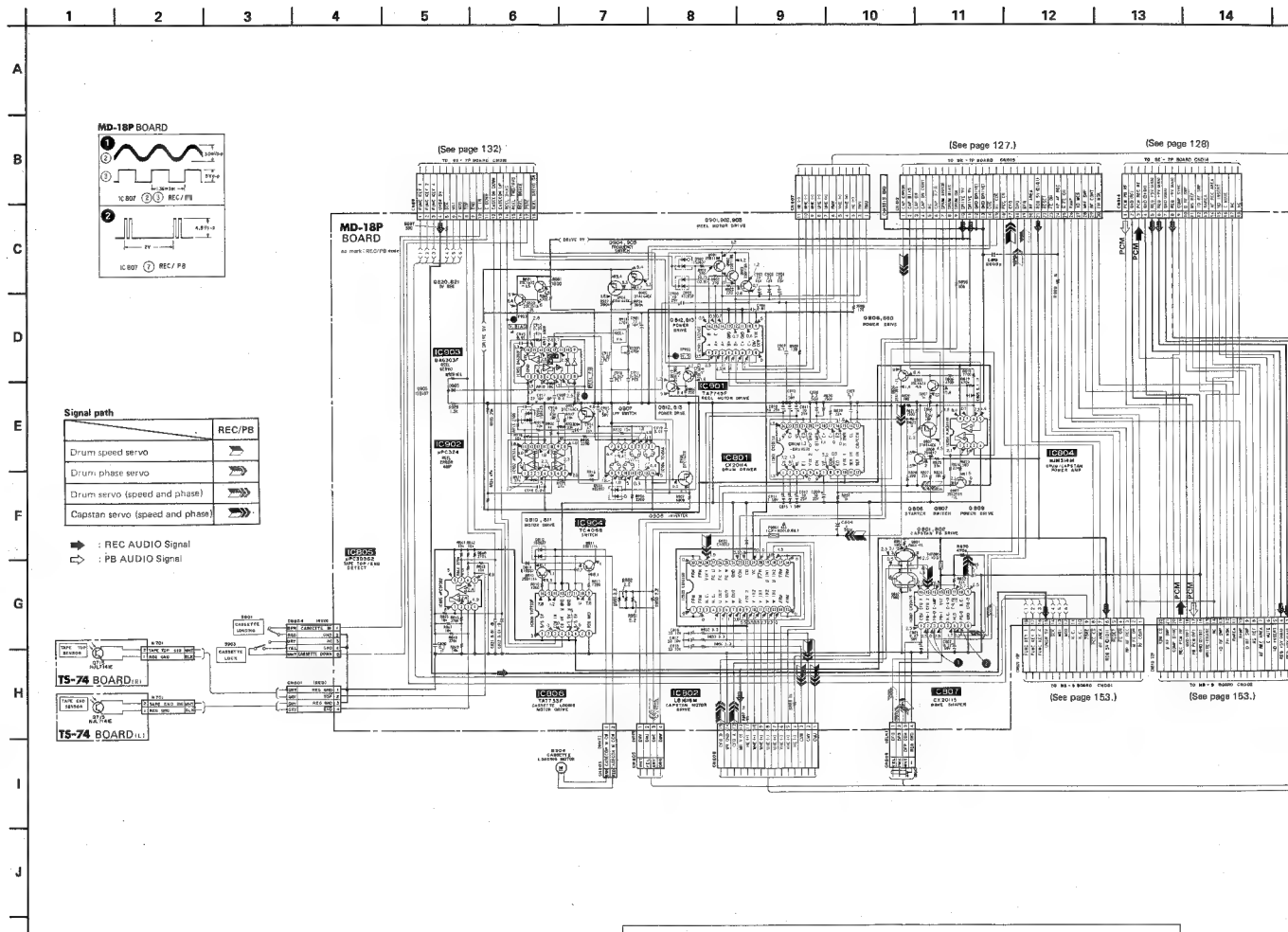
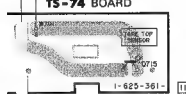
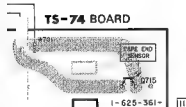
A
B
C
D
E
F
G
H
I
J

Signal path

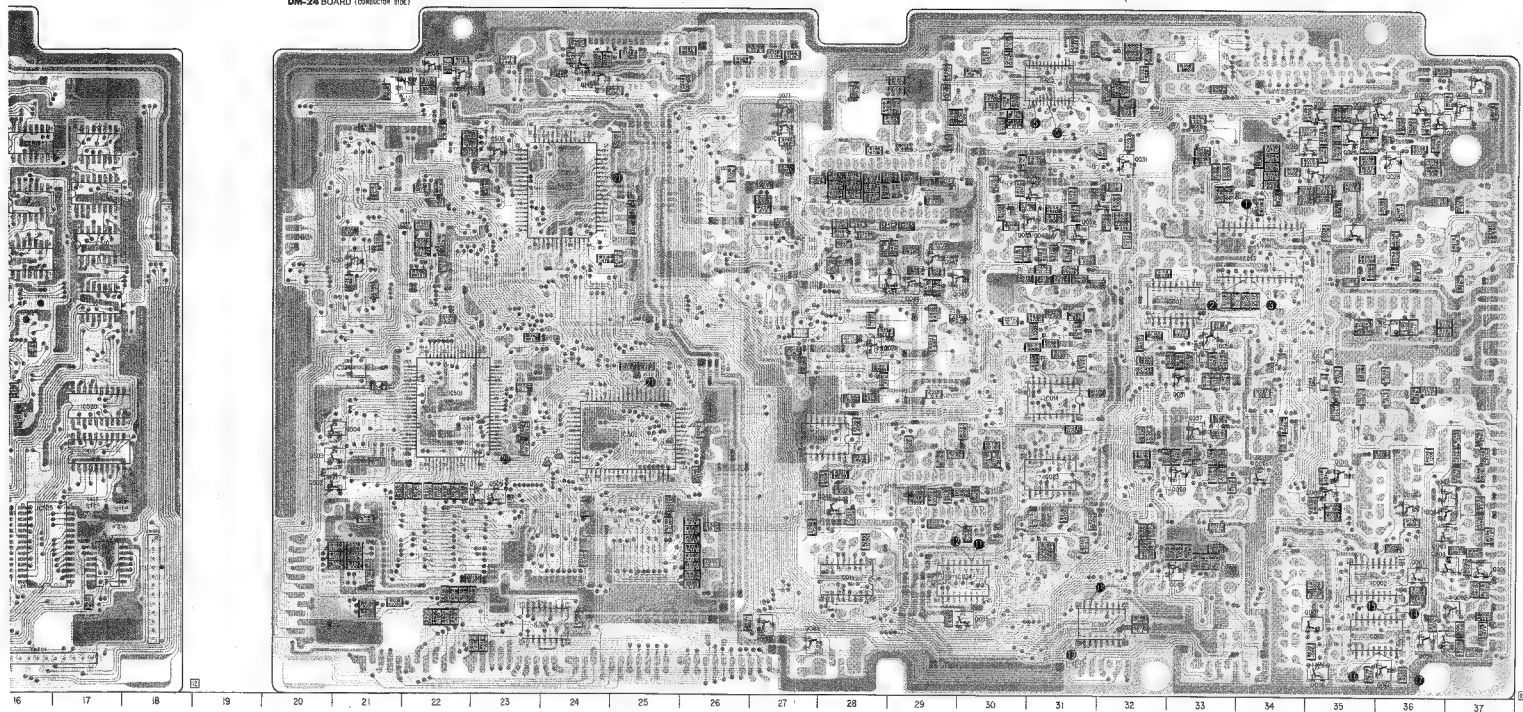
Drum spa
Drum ph
Drum sen
Capstan s

➔ : R
➔ : Pt

TS-74 BOA
TS-74 BOA



DM-24 BOARD (CONNECTOR SIDE)



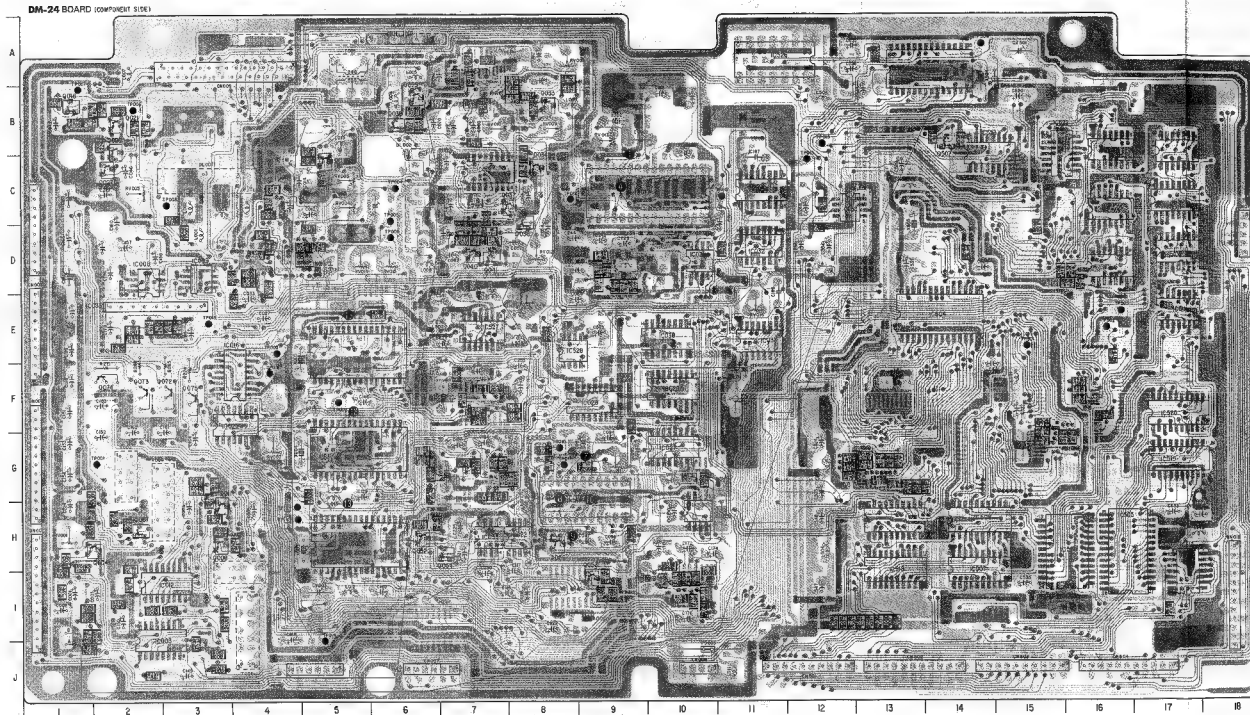
DM-24 (DIGITAL PICTURE) PRINTED WIRING BOARD

- Ref. No. DM-24 BOARD: 6,000 series -

DM-24 BOARD

CN001	H-1	Q001	I37	RV001	H-1
CN002	F-1	Q002	I37	RV003	C-5
CN003	E-1	Q003	H37	RV004	G-5
CN004	C-1	Q004	H-2	RV005	C-2
CN005	J-5	Q005	J37	RV007	G-4
CN007	J-6	Q006	J36	RV008	A-8
CN008	J-10	Q007	I-35	RV009	B-8
CN009	A-3	Q008	H-3	RV010	B-7
CN010	H-18	Q009	G-35	RV011	G-9
CN019	D-18	Q010	G-35	RV012	D-8
CN021	J-12	Q011	H-3	RV013	B-9
CN022	J-13	Q012	C-5	RV014	C-5
CN033	J-15	Q013	D-35	RV015	D-6
CN034	I-16	Q014	C-35	RV016	E-11
		Q015	B-35		
		Q016	B-35		
CV001	C-6	Q017	B-37	TP001	G-2
CV002	B-9	Q018	B-1	TP002	F-5
CV003	I-5	Q019	B-37	TP003	E-4
CV001	A-15	Q020	B-2	TP004	C-6
		Q021	B-2	TP005	G-6
D502	B-15	Q022	B-36	TP006	B-2
D503	B-22	Q023	B-36	TP007	B-1
		Q024	B-35	TP008	C-3
K2001	I-36	Q025	B-35	TP009	D-6
K2002	I-36	Q026	B-35	TP010	G-8
K2003	C-3	Q027	B-35	TP011	G-8
K2004	H-5	Q027	G-2	TP012	C-8
K2005	E-5	Q028	C-36	TP013	C-12
K2006	E-5	Q029	B-6	TP014	J-5
K2007	E-33	Q030	B-6	TP015	E-9
K2008	D-2	Q031	C-32	TP016	F-4
K2009	D-3	Q032	C-32	TP017	G-11
K2010	I-32	Q033	E-8	TP018	B-12
K2011	I-28	Q034	C-8	TP021	E-15
K2012	I-3	Q035	D-31	TP022	E-16
K2013	C-34	Q036	C-8	TP023	E-16
K2014	F-31	Q037	C-8	TP024	A-14
K2015	B-31	Q038	C-31		
K2016	F-4	Q039	D-31	TPX	H-4
K2017	C-10	Q040	D-7	TPH	H-4
K2018	B-9	Q041	D-7		
K2019	C-7	Q042	D-31		
K2020	F-9	Q043	D-30		
K2021	D-10	Q044	D-29		
K2022	H-6	Q045	D-29		
K2023	G-31	Q047	D-29		
K2024	I-30	Q048	H-28		
K2025	F-4	Q049	I-33		
K2026	H-10	Q050	G-33		
K2027	G-10	Q051	F-33		
K2028	F-10	Q052	H-6		
K2030	C-12	Q053	I-8		
K2031	E-11	Q054	H-7		
K2032	D-11	Q055	I-30		
K2033	E-2	Q056	H-8		
K2034	C-11	Q057	G-33		
K2035	H-7	Q058	E-33		
K2037	B-28	Q059	J-36		
K2038	E-10	Q060	J-36		
K2001	F-22	Q061	I-36		
K2002	G-25	Q063	G-37		
K2009	B-24	Q064	H-37		
K2004	E-14	Q065	H-37		
K2005	H-16	Q066	H-38		
K2006	H-16	Q067	H-2		
K2007	H-14	Q068	I-27		
K2008	H-14	Q069	D-27		
K2009	C-17	Q070	B-27		
K2010	D-17	Q071	B-27		
K2011	E-17	Q072	F-3		
K2012	B-17	Q073	F-2		
K2013	H-16	Q074	E-2		
K2014	B-18	Q075	F-3		
K2015	H-13	Q076	E-34		
K2016	D-16	Q077	E-28		
K2017	H-17	Q144	A-24		
K2018	H-13	Q145	A-24		
K2019	G-17	Q501	D-21		
K2020	I-17	Q502	D-21		
K2021	A-14	Q503	G-21		
K2022	B-15	Q504	G-21		
K2023	B-16	Q505	A-22		
K2024	F-21	Q506	A-22		
K2025	I-24	Q507	B-14		
K2026	A-11	Q508	C-23		
K2027	E-7	Q509	H-23		
K2028	E-8	Q510	H-23		

DM-24 BOARD (COMPONENT SIDE)



EDITOR BLOCK

EDITOR BLOCK

DM-15P BOARD

DM401 B-9

D401 A-2

D402 G-5

IC401 D-6

IC402 H-6

IC403 C-8

IC404 C-7

IC405 E-1

IC406 D-2

IC407 D-2

IC408 C-2

IC409 B-2

IC410 J-5

IC411 J-6

IC412 A-6

IC413 A-4

IC414 A-2

IC415 E-5

IC416 A-8

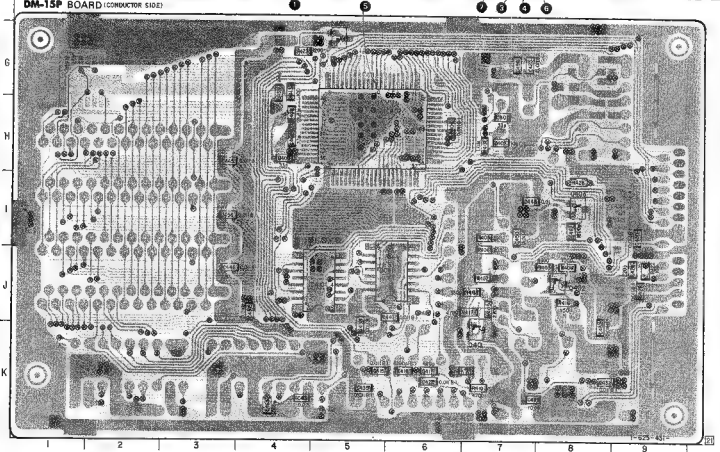
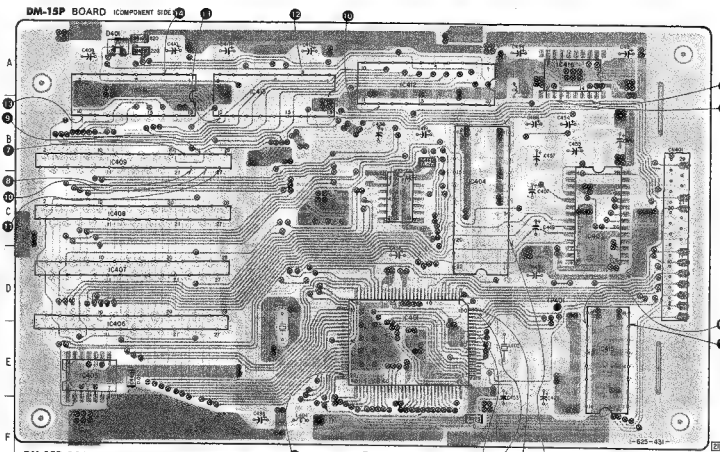
IC417 C-6

Q401 K-7

Q402 J-8

Q403 I-8

TP401 D-8



DM-15P BOARD

CH401 B/S

D401 A-2

D402 G-6

IC401 D-6

IC402 H-6

IC403 D-8

IC404 C-7

IC405 E-1

IC406 D-2

IC407 D-2

IC408 C-2

IC409 B-2

IC410 J-5

IC411 J-6

IC412 A-6

IC413 A-4

IC414 A-2

IC415 E-8

IC416 A-8

IC417 C-6

Q401 K-7

Q402 J-8

Q403 I-8

TP401 D-8

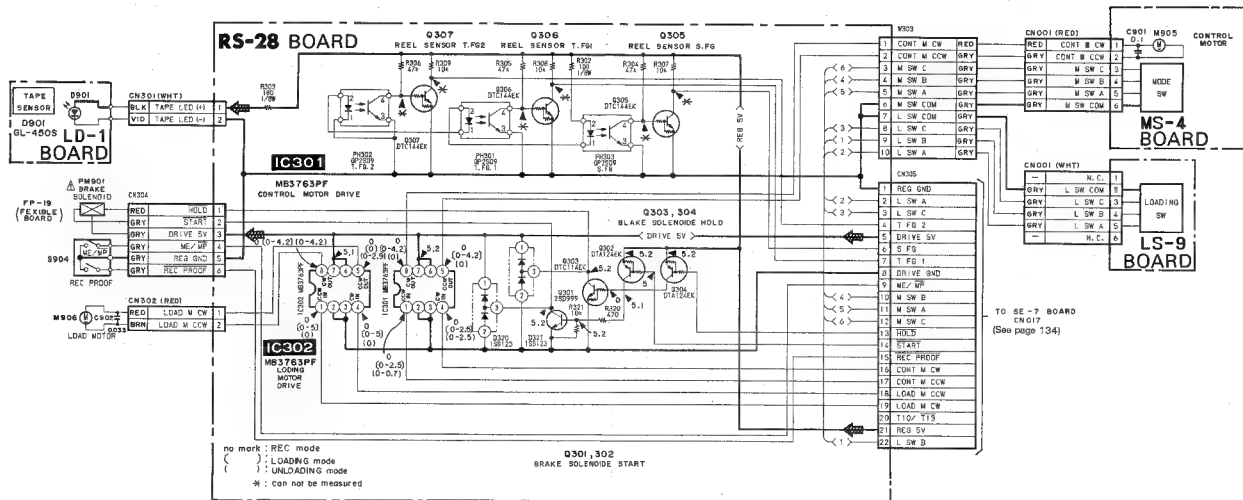


RS-28 (MECHANISM CONTROL), LD-1 (TAPE SENSOR), MS-4 (MODE SWITCH), LS-9 (LOADING SWITCH) SCHEMATIC DIAGRAM

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

— Ref. No. RS-28 BOARD: 4000 series, LD-1 BOARD: 4100 series, MS-4 BOARD: 4200 series, LS-9 BOARD: 4300 series —

REC/PB DECK



When indicating parts by reference number, please include the board name.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

MECHANISM CONTROL MECHANISM CONTROL

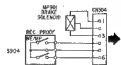
RS-28 (MECHANISM CONTROL), LD-1 (TAPE SENSOR), MS-4 (MODE SWITCH), LS-9 (LOADING SWITCH) PRINTED WIRING BOARD

— Ref. No. RS-28 BOARD: 4100 series. LD-1 BOARD: 4100 series. MS-4 BOARD: 4200 series. LS-9 BOARD: 4300 series —

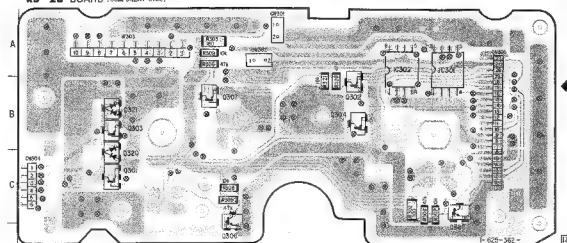
REC/PB DECK

RS-28 BOARD

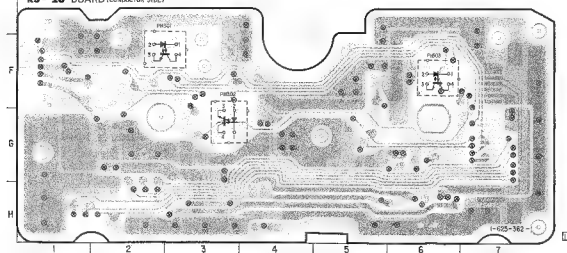
CN301 A-4
CN302 A-4
CN304 C-1
CN305 A-7
Q320 C-2
Q321 B-2
IC301 A-6
IC302 A-6
Q301 C-2
Q302 B-2
Q303 B-2
Q304 B-2
Q305 C-7
Q306 D-3
Q307 B-3
WD03 A-2



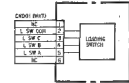
RS-28 BOARD (COMPONENT SIDE)



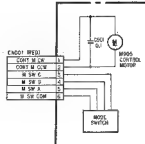
RS-28 BOARD (CONDUCTOR SIDE)



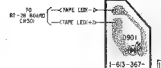
LS-9 BOARD



MS-4 BOARD



LD-1 BOARD



- Digital transistor (RS-28: Q302, 303, 304, 305, 306, 307) transistor with resistors.
Refer to the RS-28 board schematic diagram for digital transistor.



MB-9P (PCM AUDIO) PRINTED WIRING BOARD

- Ref. No. MB-9P BOARD: 5000 series -

REC/PB DECK

MB-9P BOARD

CN001 F-10
 CN002 C-10
 CN003 C-9
 CN004 A-8
 CN005 A-5
 CN006 A-2

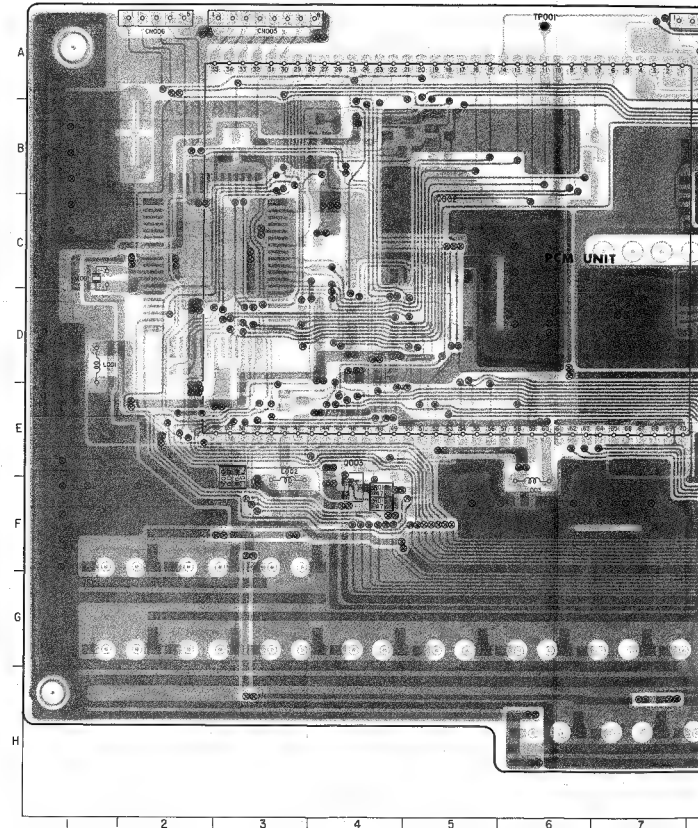
D002 B-17
 D003 B-17
 D081 H-12
 D082 H-10
 D083 H-10
 D084 D-18

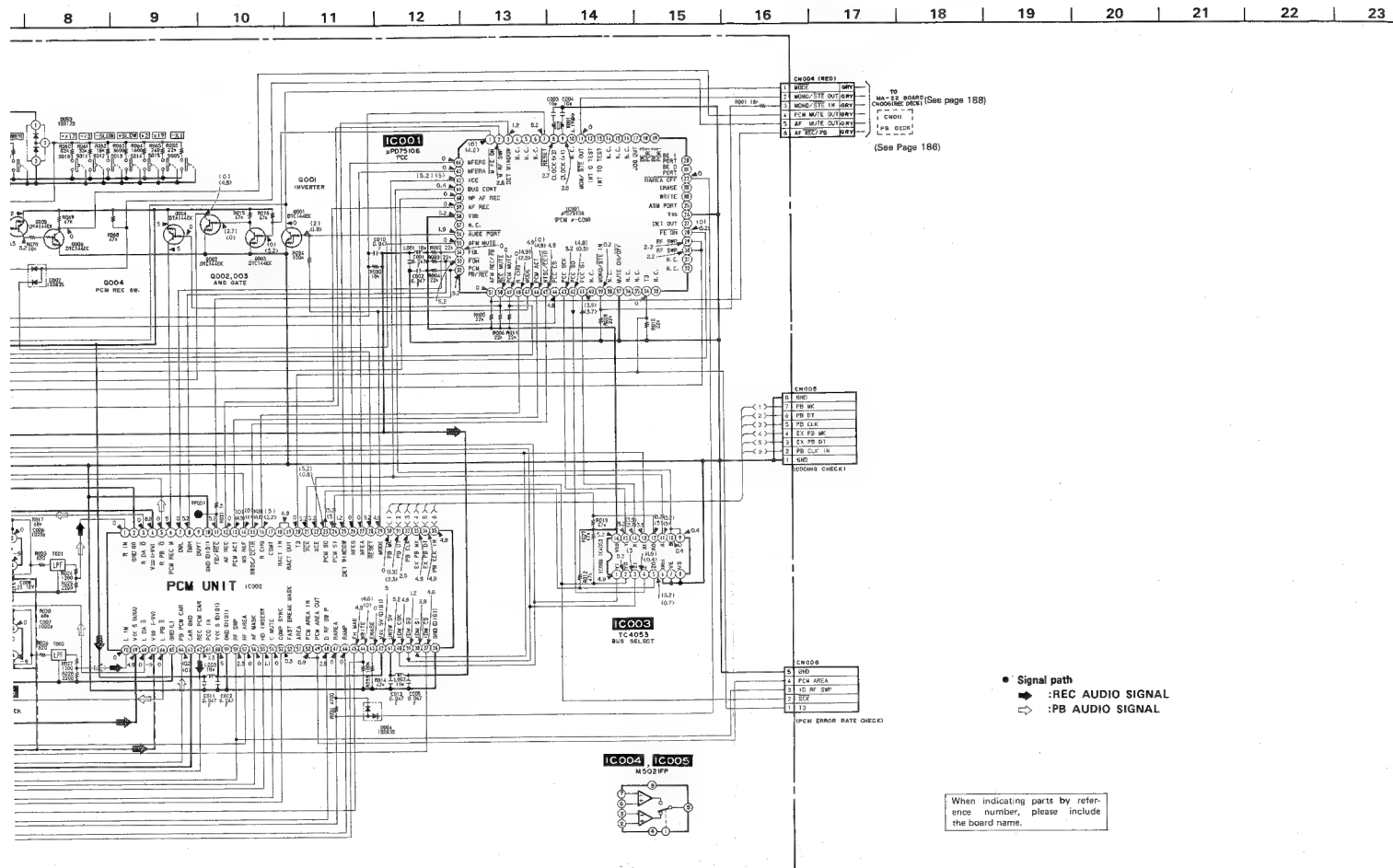
IC001 C-19
 IC002 C-17
 IC003 C-14
 IC004 C-14
 IC006 D-14

Q001 B-19
 Q002 E-18
 Q003 E-4
 Q004 B-18
 Q005 B-18
 Q006 B-18

TP001 A-8/A-18

MB-9P BOARD (COMPONENT SIDE)





MB-9P (PCM AUDIO) SCHEMATIC DIAGRAM

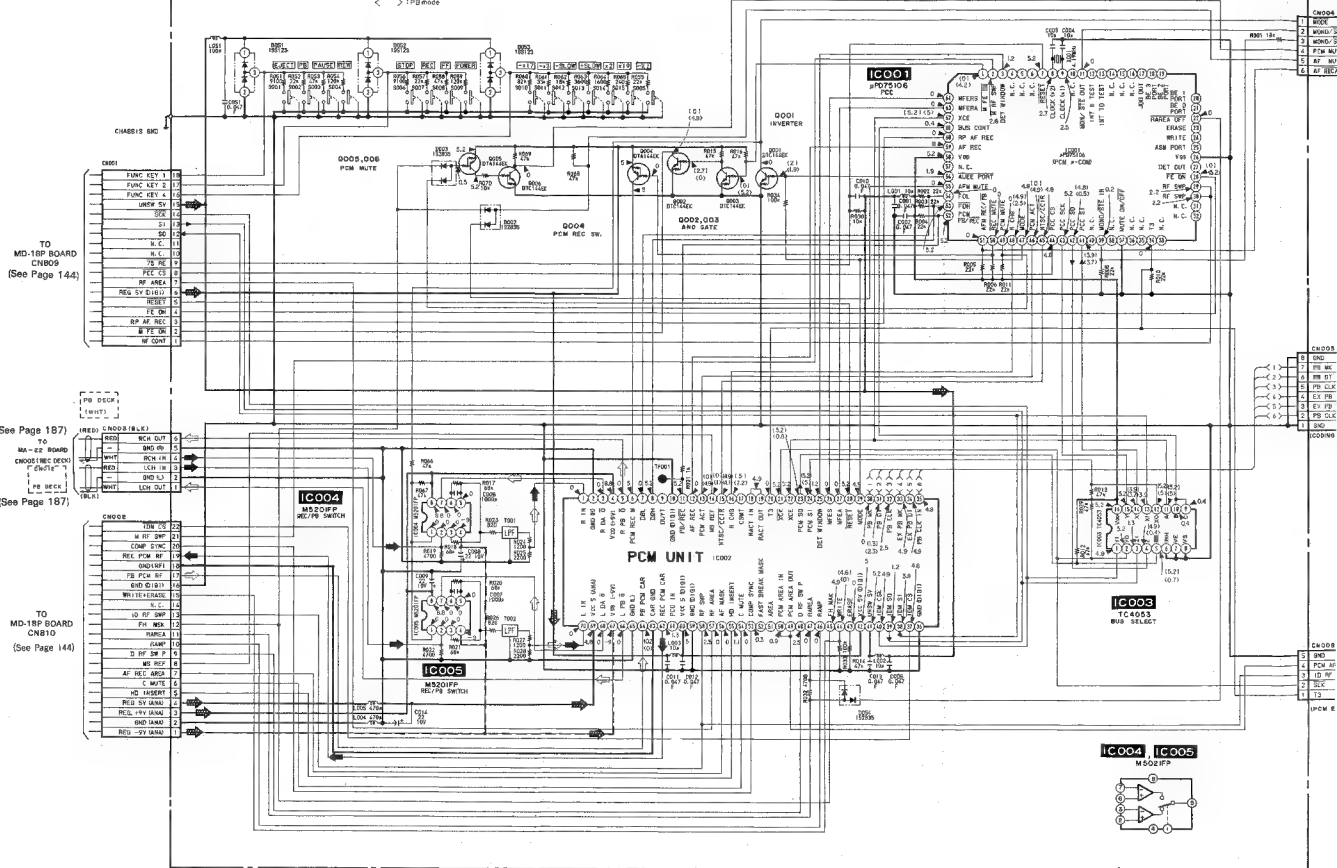
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Ref. No. MB-9P BOARD: 5000 series

A REC/PB DECK

MB-9P BOARD

no mark : REC/PB mode
< : 1/2 REC mode
> : 1/2 PB mode



PCM AUDIO PCM AUDIO

PD-16P (PCM AUDIO DIGITA), PA-11P (PCM AUDIO ANALOG) PRINTED WIRING BOARDS

- Ref. No. PD-16P BOARD: 5,000 series, PA-11P BOARD: 5,500 series -

REC/PB DECK

PD-16P BOARD

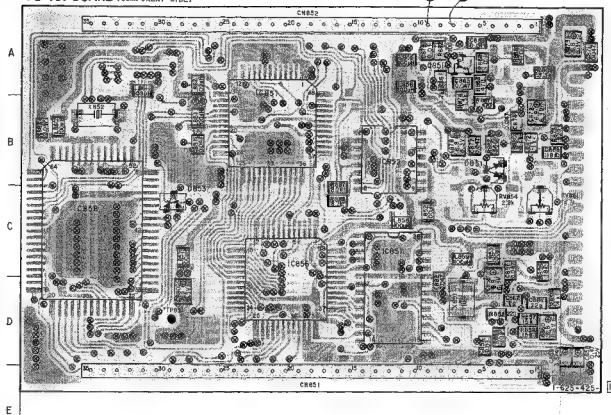
CN851 E-4
CN862 A-4
CN863 F-7

D851 B-6
D863 D-2
IC851 A-3
IC852 B-5
IC853 H-6
IC854 H-6
IC855 G-3
IC856 C-4
IC857 C-9
IC858 C-1
IC859 H-3

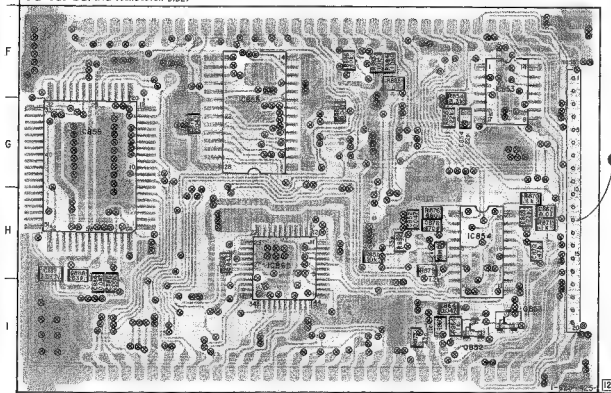
Q851 A-6
Q852 H-6
Q853 H-6

RV851 C-8
RV854 C-6
TP851 D-2

PD-16P BOARD (COMPONENT SIDE)



PD-16P BOARD (CONDUCTOR SIDE)



PA-11P BOARD

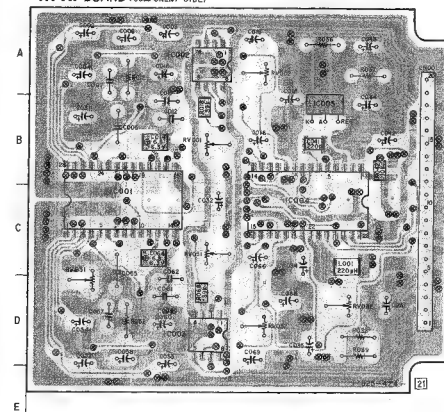
CN001 A-6
D051 H-4
D052 H-3

IC001 D-1
IC002 A-2
IC003 D-2
IC004 C-3
IC005 B-4

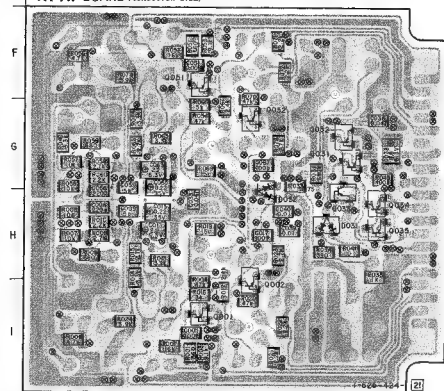
Q001 H-2
Q002 A-3
Q031 G-4
Q032 G-4
Q033 H-4
Q034 H-4
Q035 H-4
Q051 F-2
Q052 G-3

RV001 B-2
RV002 A-3
RV003 D-1
RV004 C-4
RV005 D-3

PA-11P BOARD (COMPONENT SIDE)



PA-11P BOARD (CONDUCTOR SIDE)

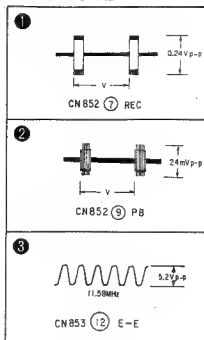


PD-16P (PCM AUDIO DIGITAL), PA-11P (PCM AUDIO ANALOG) PRINTED WIRING BOARDS

- Ref. No. PD-16P BOARD: 5,000 series, PA-11P BOARD: 5,500 series -

REC/PB DECK

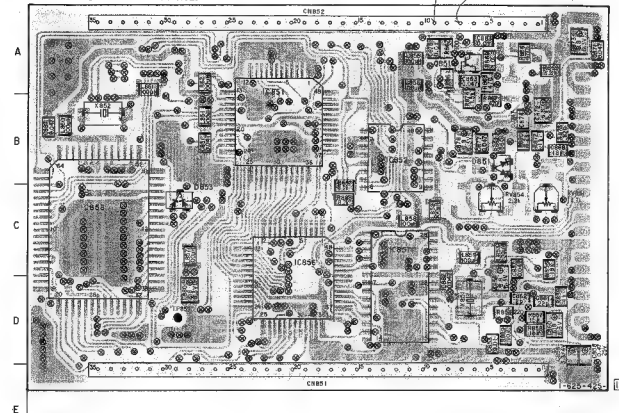
PD-16P BOARD



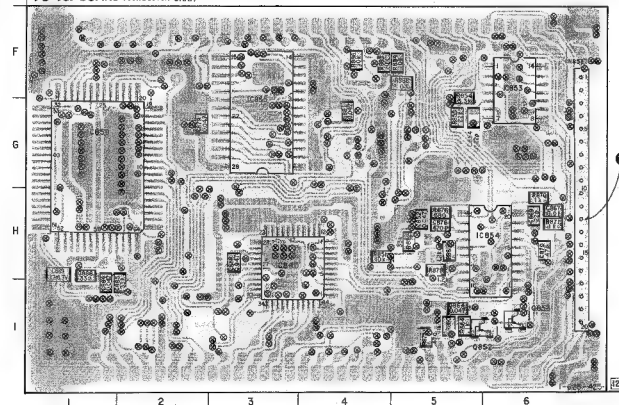
PD-16P BOARD

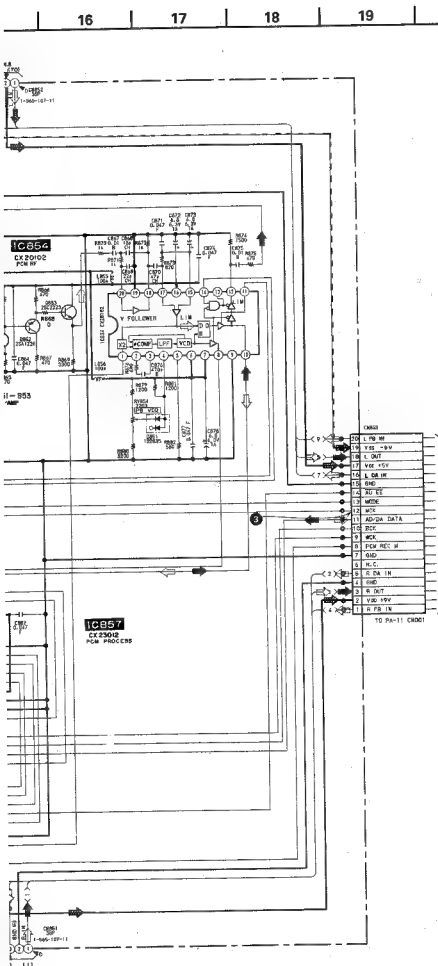
CN851	E-4
CN852	A-4
CN853	F-7
DBS1	B-6
DBS3	C-2
IC861	A-3
IC862	B-5
IC863	P-6
IC864	H-5
IC865	D-3
IC866	C-4
IC867	C-6
IC868	C-1
IC869	G-1
IC860	H-3
CB51	A-5
CB52	I-8
CB53	I-6
RV851	C-8
RV854	C-6
TP851	D-2

PD-16P BOARD (COMPONENT SIDE)

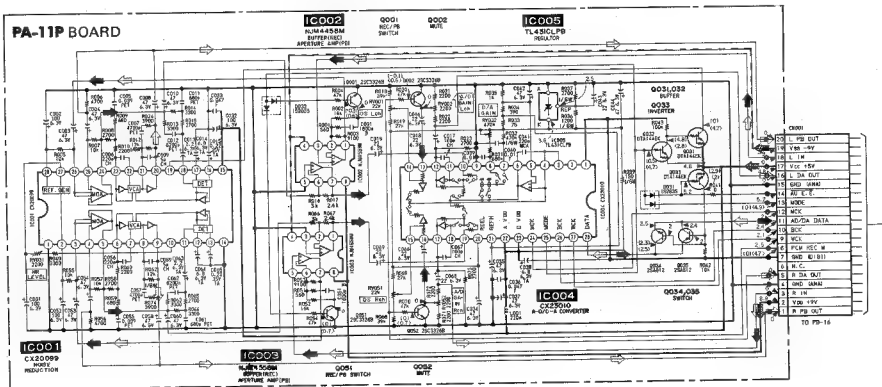


PD-16P BOARD (CONDUCTOR SIDE)



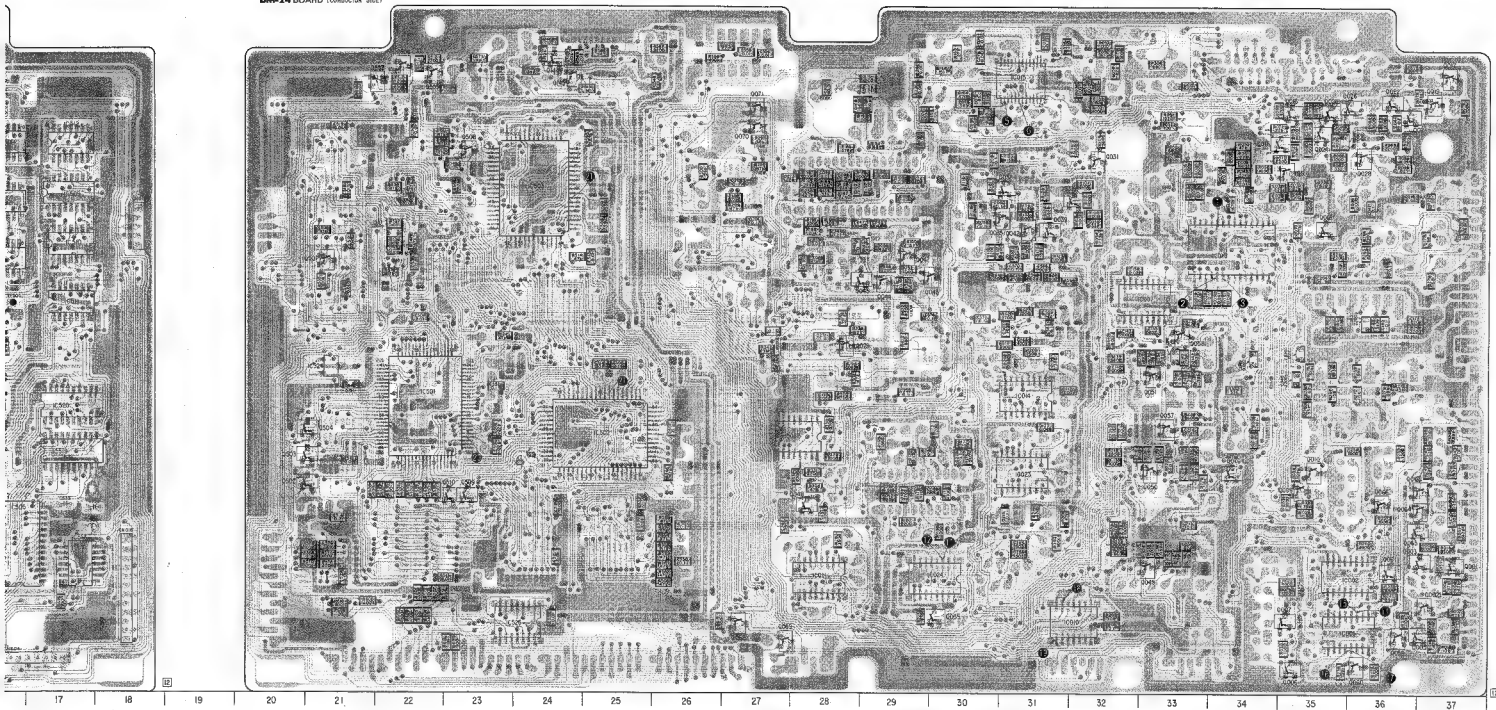


PA-11P BOARD





DM-24 BOARD (CONDUCTOR SIDE)



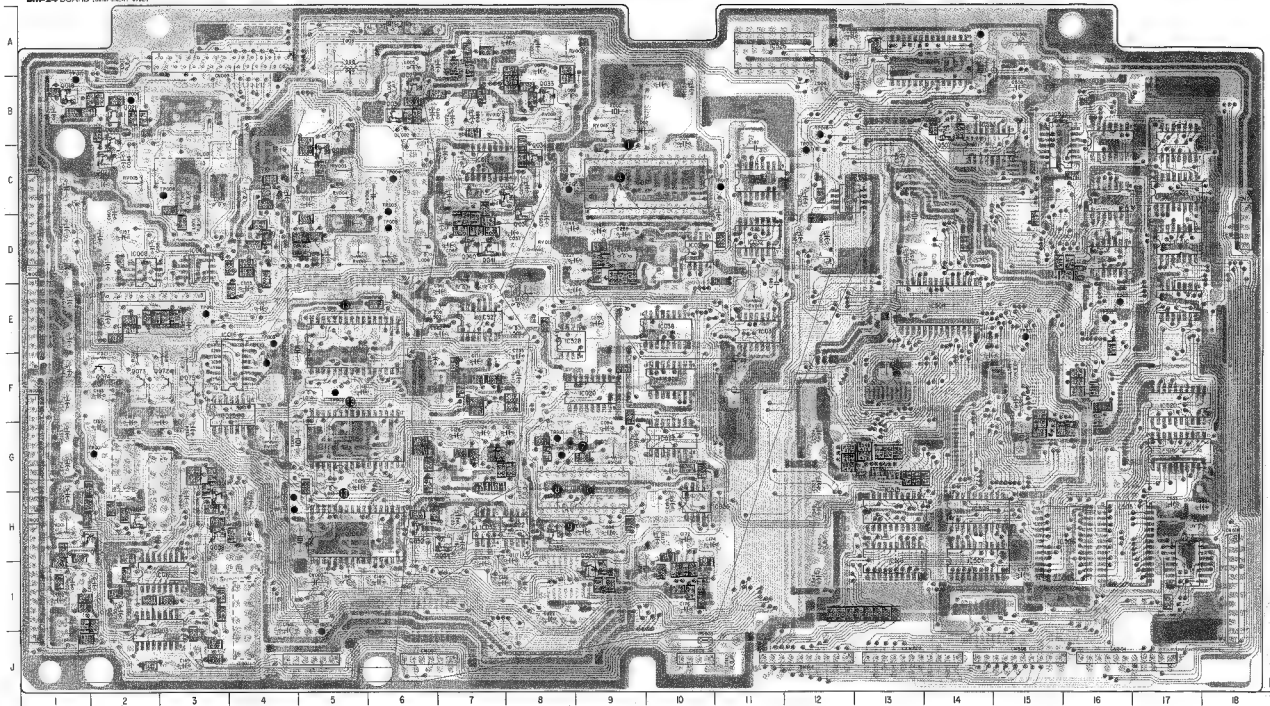
DM-24 (EDIT CONTROL), CO-3 (PAUSE CONTROL), AND CO-4 (PAUSE OUT) PRINTED WIRING BOARDS

— Ref. No. DM-24 BOARD: 6,000 series, CO-3 and CO-4 BOARDS: 8,000 series —

DM-24 BOARD

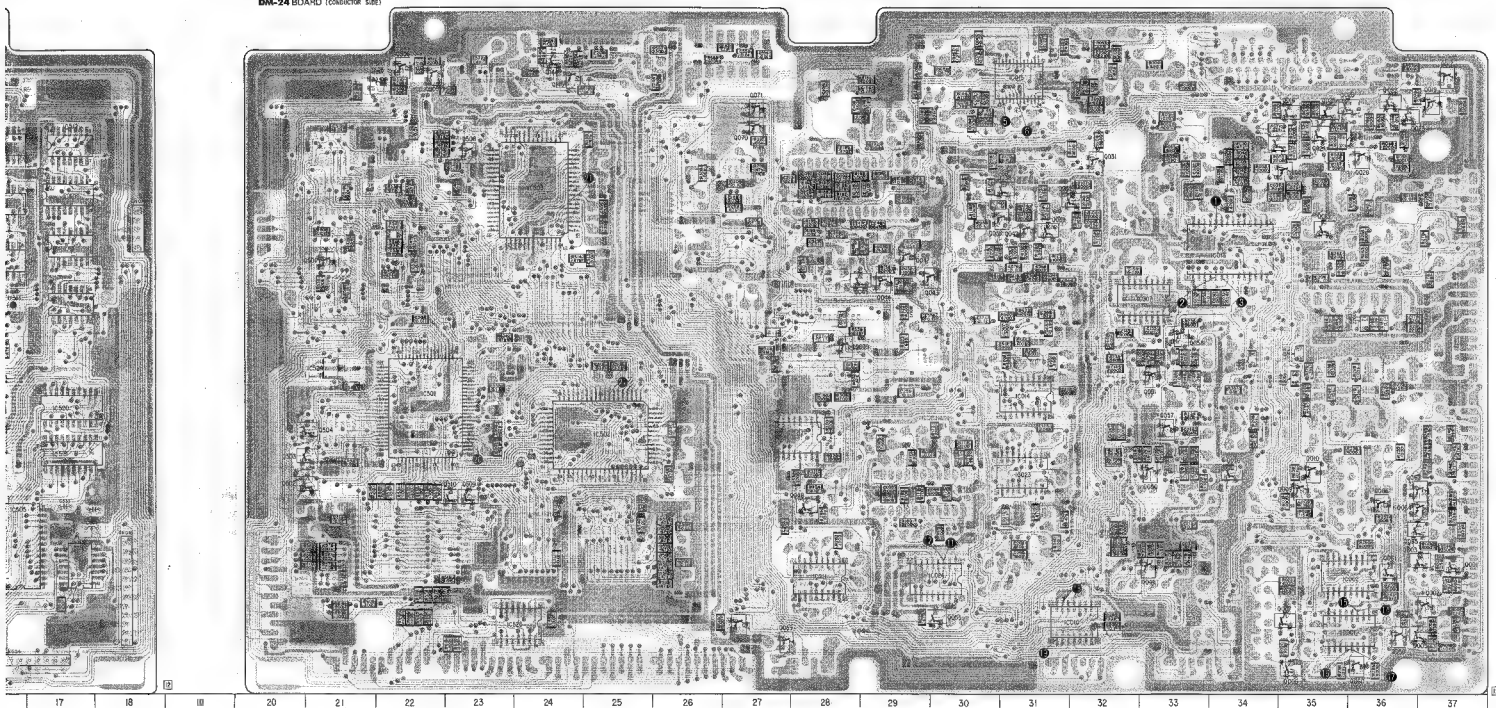
CM001	H-1	Q001	I-37	RV001	H-1
CM002	F-1	Q002	I-37	RV003	C-5
CM003	E-1	Q003	I-37	RV004	C-5
CM004	C-1	Q004	H-2	RV005	C-2
CM006	J-5	Q005	J-37	RV007	G-4
CM007	J-6	Q006	J-35	RV008	A-8
CM008	I-10	Q007	I-35	RV009	B-8
CM009	A-3	Q008	H-3	RV010	B-7
CM010	H-18	Q009	C-35	RV011	G-9
CM011	D-18	Q010	C-35	RV012	D-8
CM012	I-12	Q011	H-8	RV013	B-9
CM013	I-13	Q012	C-3	RV014	D-9
CM014	J-15	Q013	D-35	RV015	D-6
CM015	J-15	Q014	C-30	RV016	E-11
CM016	C-6	Q015	B-35		
CM017	B-9	Q016	B-35	TP001	G-2
CM018	I-5	Q017	B-37	TP002	F-5
CM019	A-15	Q018	B-1	TP003	E-4
CM020	B-15	Q019	B-37	TP004	C-6
CM021	B-15	Q020	B-2	TP005	C-6
CM022	B-15	Q021	B-2	TP006	B-2
CM023	B-15	Q022	B-36	TP007	B-1
CM024	B-15	Q023	B-36	TP008	C-3
CM025	B-15	Q024	B-35	TP009	D-8
CM026	B-15	Q025	B-35	TP010	G-8
CM027	B-15	Q026	B-35	TP011	G-8
CM028	B-15	Q027	C-2	TP012	C-12
CM029	B-15	Q028	C-36	TP013	C-12
CM030	B-15	Q029	B-4	TP014	E-5
CM031	B-15	Q030	B-6	TP015	E-3
CM032	B-15	Q031	C-32	TP016	F-4
CM033	B-15	Q032	C-32	TP017	C-11
CM034	B-15	Q033	C-32	TP018	B-12
CM035	B-15	Q034	C-8	TP501	E-15
CM036	B-15	Q035	D-31	TP502	E-16
CM037	B-15	Q036	C-8	TP503	E-16
CM038	B-15	Q037	C-8	TP504	A-14
CM039	B-15	Q038	C-31		
CM040	B-15	Q039	D-31	TP11	H-4
CM041	B-15	Q040	D-7	TP12	H-4
CM042	B-15	Q041	D-7		
CM043	B-15	Q042	D-31		
CM044	B-15	Q043	D-30		
CM045	B-15	Q044	D-29		
CM046	B-15	Q045	D-29		
CM047	B-15	Q046	D-29		
CM048	B-15	Q047	D-29		
CM049	B-15	Q048	H-28		
CM050	B-15	Q049	H-33		
CM051	B-15	Q050	H-33		
CM052	B-15	Q051	H-33		
CM053	B-15	Q052	H-6		
CM054	B-15	Q053	H-6		
CM055	B-15	Q054	H-7		
CM056	B-15	Q055	H-7		
CM057	B-15	Q056	H-8		
CM058	B-15	Q057	H-8		
CM059	B-15	Q058	H-8		
CM060	B-15	Q059	H-8		
CM061	B-15	Q060	H-8		
CM062	B-15	Q061	H-8		
CM063	B-15	Q062	H-8		
CM064	B-15	Q063	H-8		
CM065	B-15	Q064	H-8		
CM066	B-15	Q065	H-8		
CM067	B-15	Q066	H-8		
CM068	B-15	Q067	H-8		
CM069	B-15	Q068	H-8		
CM070	B-15	Q069	H-8		
CM071	B-15	Q070	H-8		
CM072	B-15	Q071	H-8		
CM073	B-15	Q072	H-8		
CM074	B-15	Q073	H-8		
CM075	B-15	Q074	H-8		
CM076	B-15	Q075	H-8		
CM077	B-15	Q076	H-8		
CM078	B-15	Q077	H-8		
CM079	B-15	Q078	H-8		
CM080	B-15	Q079	H-8		
CM081	B-15	Q080	H-8		
CM082	B-15	Q081	H-8		
CM083	B-15	Q082	H-8		
CM084	B-15	Q083	H-8		
CM085	B-15	Q084	H-8		
CM086	B-15	Q085	H-8		
CM087	B-15	Q086	H-8		
CM088	B-15	Q087	H-8		
CM089	B-15	Q088	H-8		
CM090	B-15	Q089	H-8		
CM091	B-15	Q090	H-8		
CM092	B-15	Q091	H-8		
CM093	B-15	Q092	H-8		
CM094	B-15	Q093	H-8		
CM095	B-15	Q094	H-8		
CM096	B-15	Q095	H-8		
CM097	B-15	Q096	H-8		
CM098	B-15	Q097	H-8		
CM099	B-15	Q098	H-8		
CM100	B-15	Q099	H-8		

DM-24 BOARD (COMPONENT SIDE)



EDITOR BLOCK

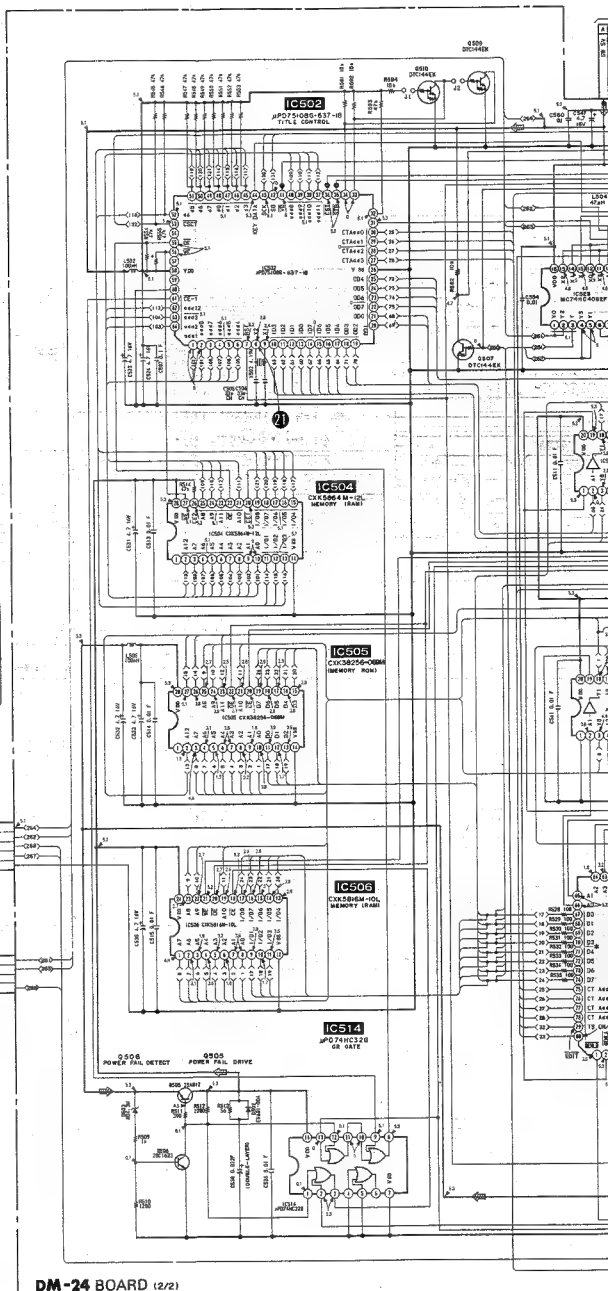
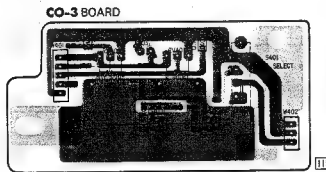
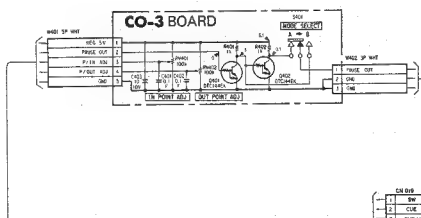
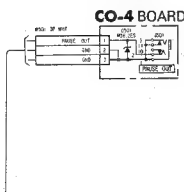
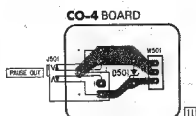
DM-24 BOARD (CONNECTOR SIDE)

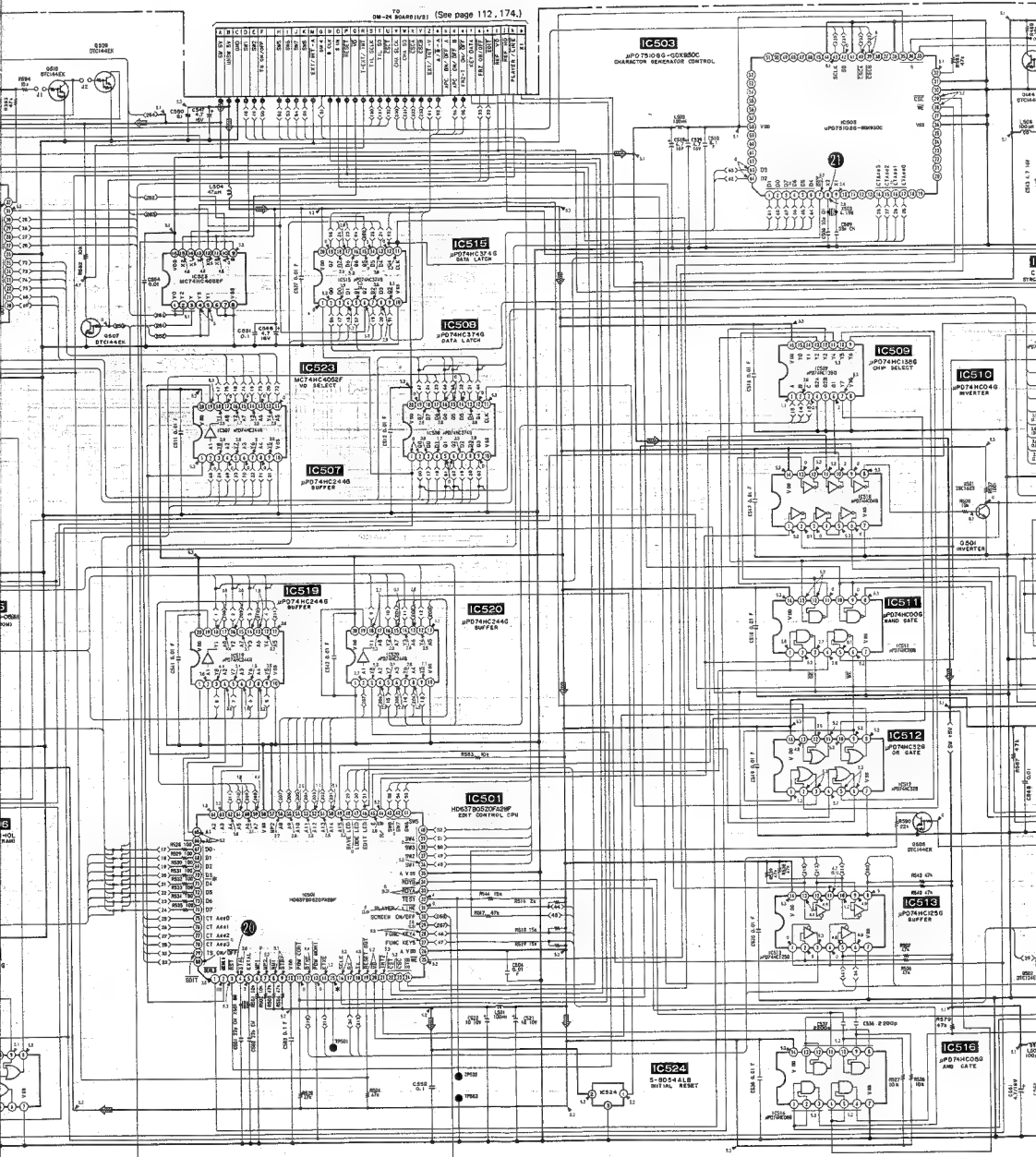


DM-24 (EDIT CONTROL, CO-3 (PAUSE CONTROL), AND CO-4 (PAUSE OUT) SCHEMATIC DIAGRAM

— Ref. No. DM-24 BOARD: 6,000 series, CO-3 and CO-4 BOARDS: 8,000 series —

EDITOR BLOCK









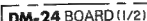
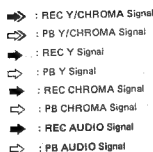
TO REC DECK
10 - Z BOARD
CNOB
(See page 129)

(See page 129.

(See page 106)

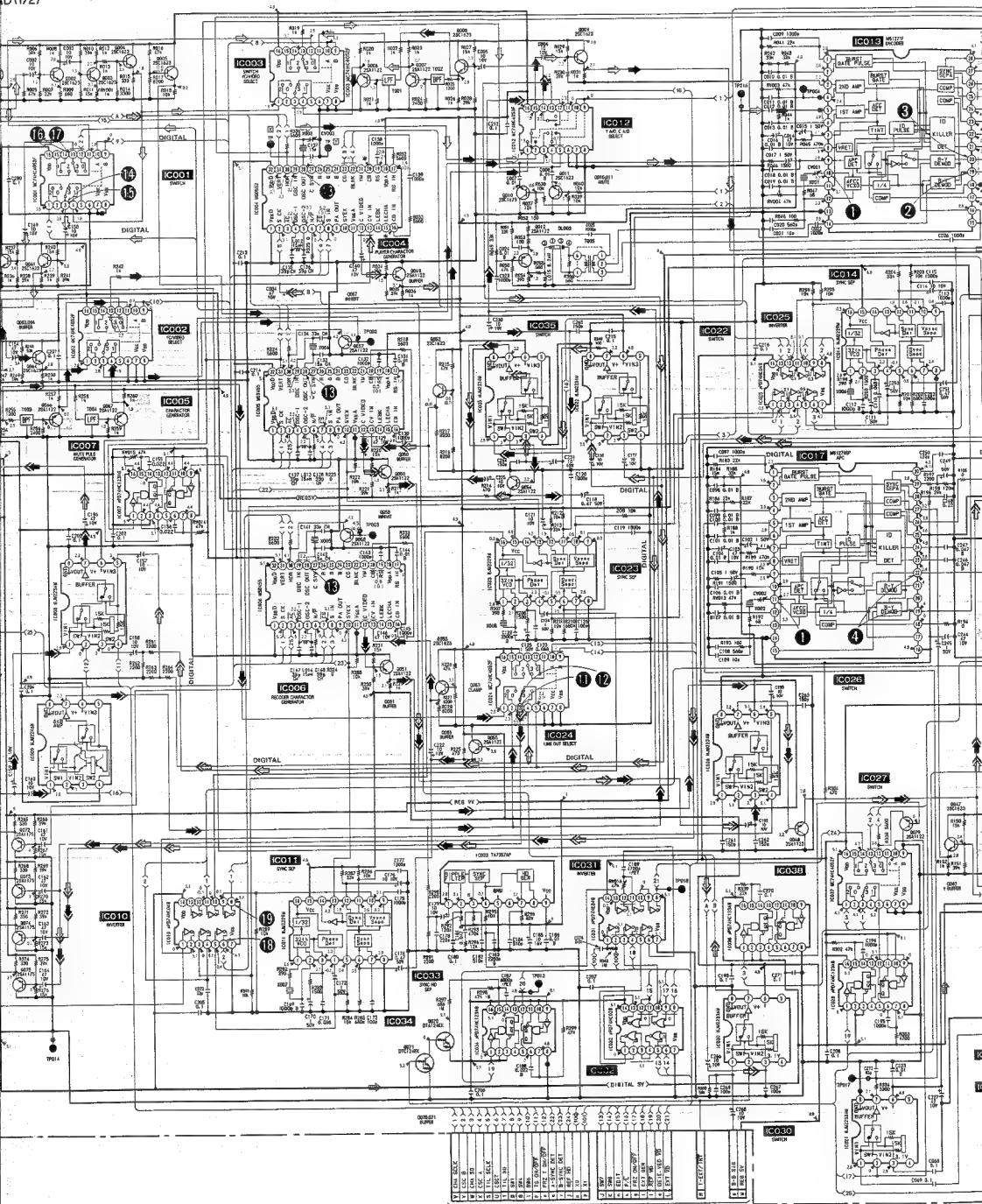
(See page 173.)

DM-24 BOARD (1/2)



(See page 198)

ID (1/2)



(See page 167, 168, 170.)

DM-24 BOARD (1/2)

See page 129.)

See page 129.)

See page 202.)

See page 166.)

See page 197.)

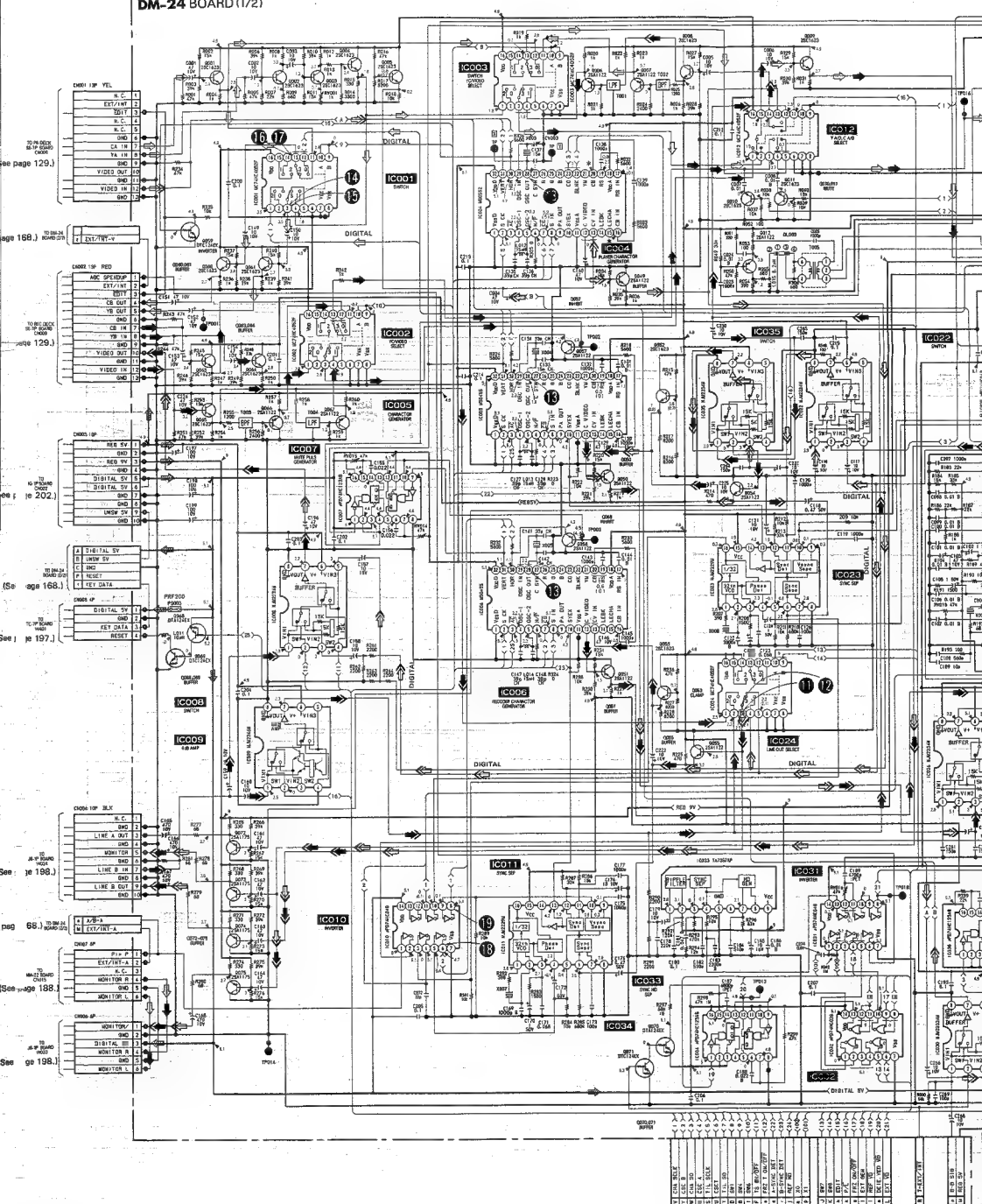
See page 198.)

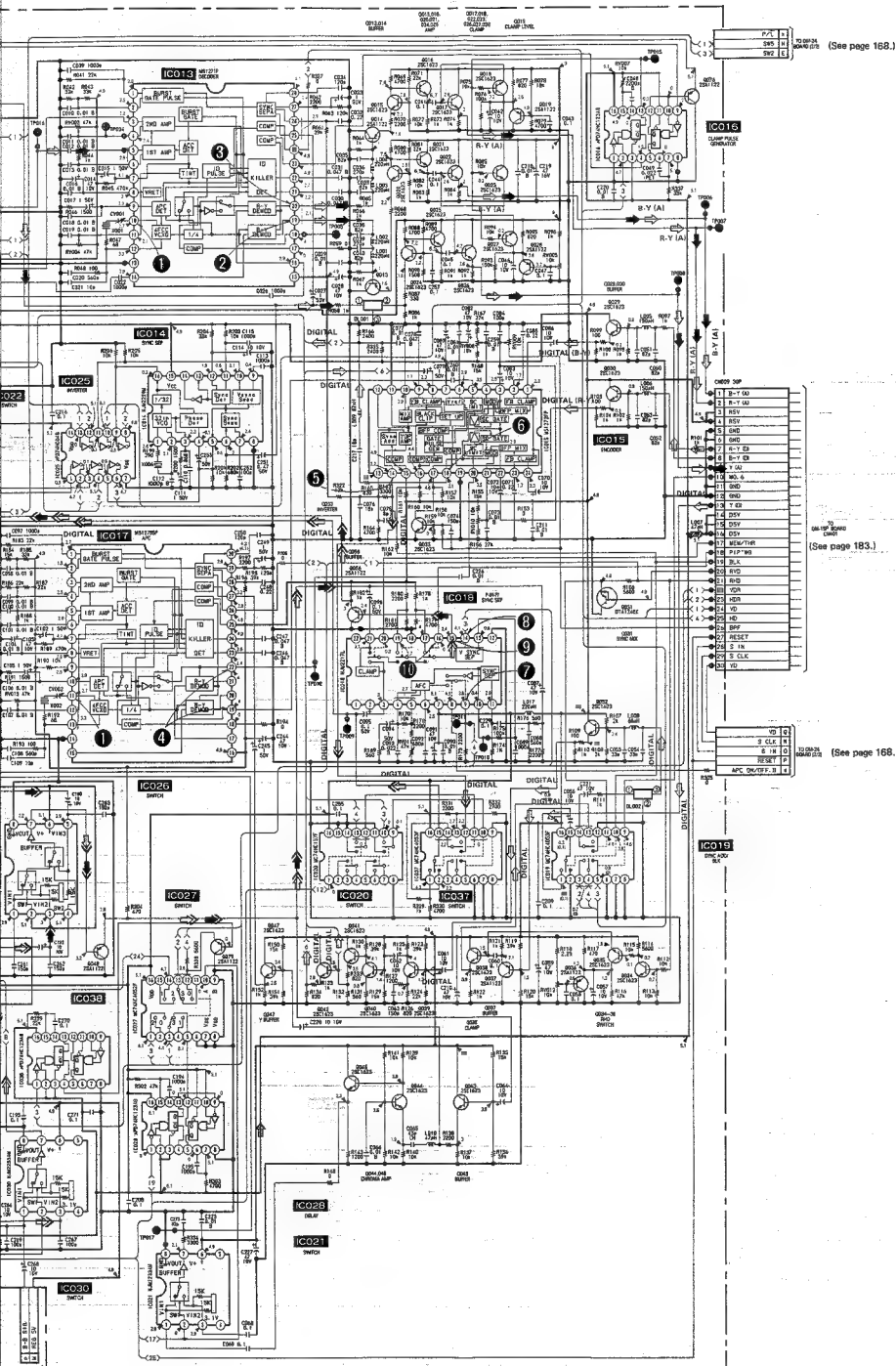
See page 198.)

See page 198.)

See page 198.)

See page 198.)



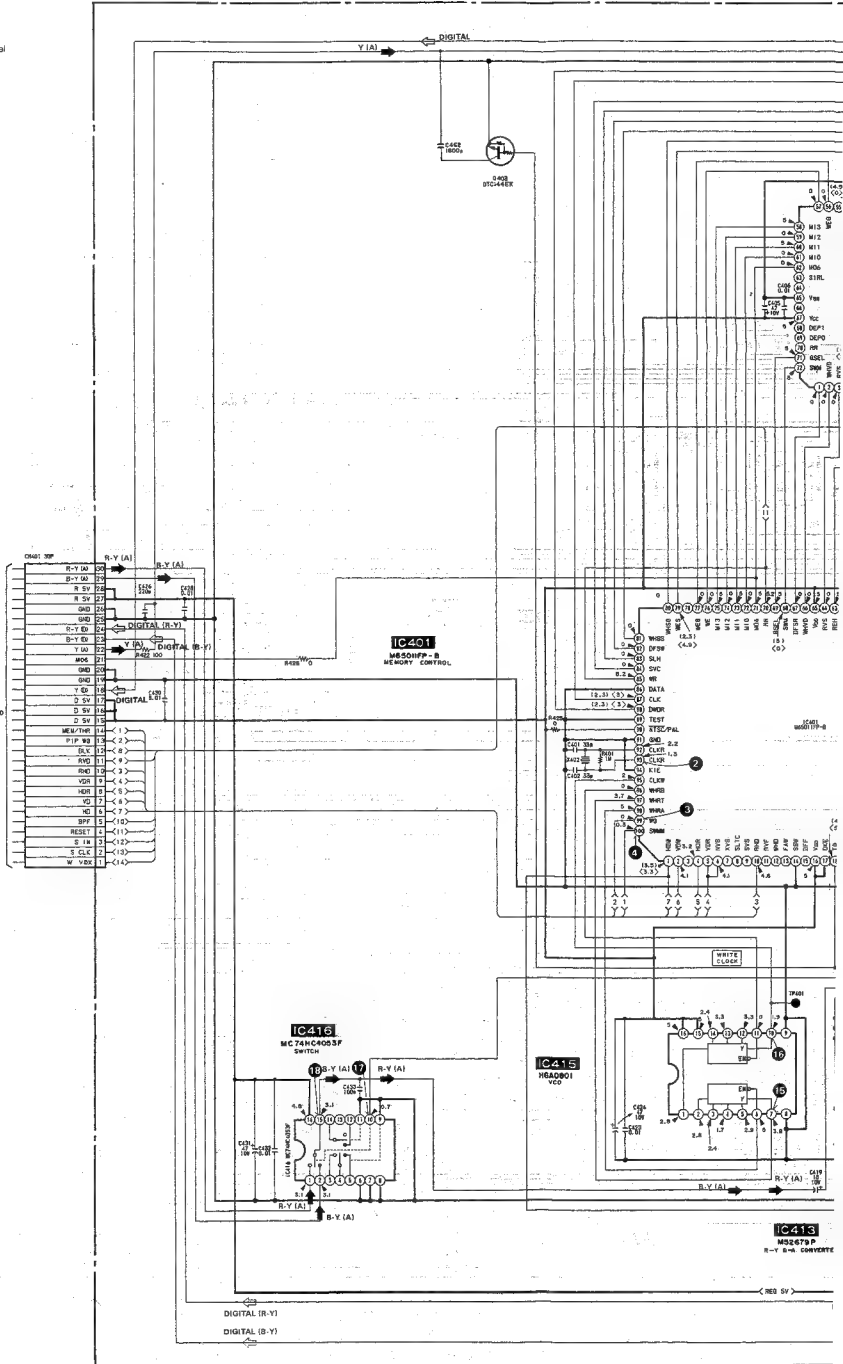


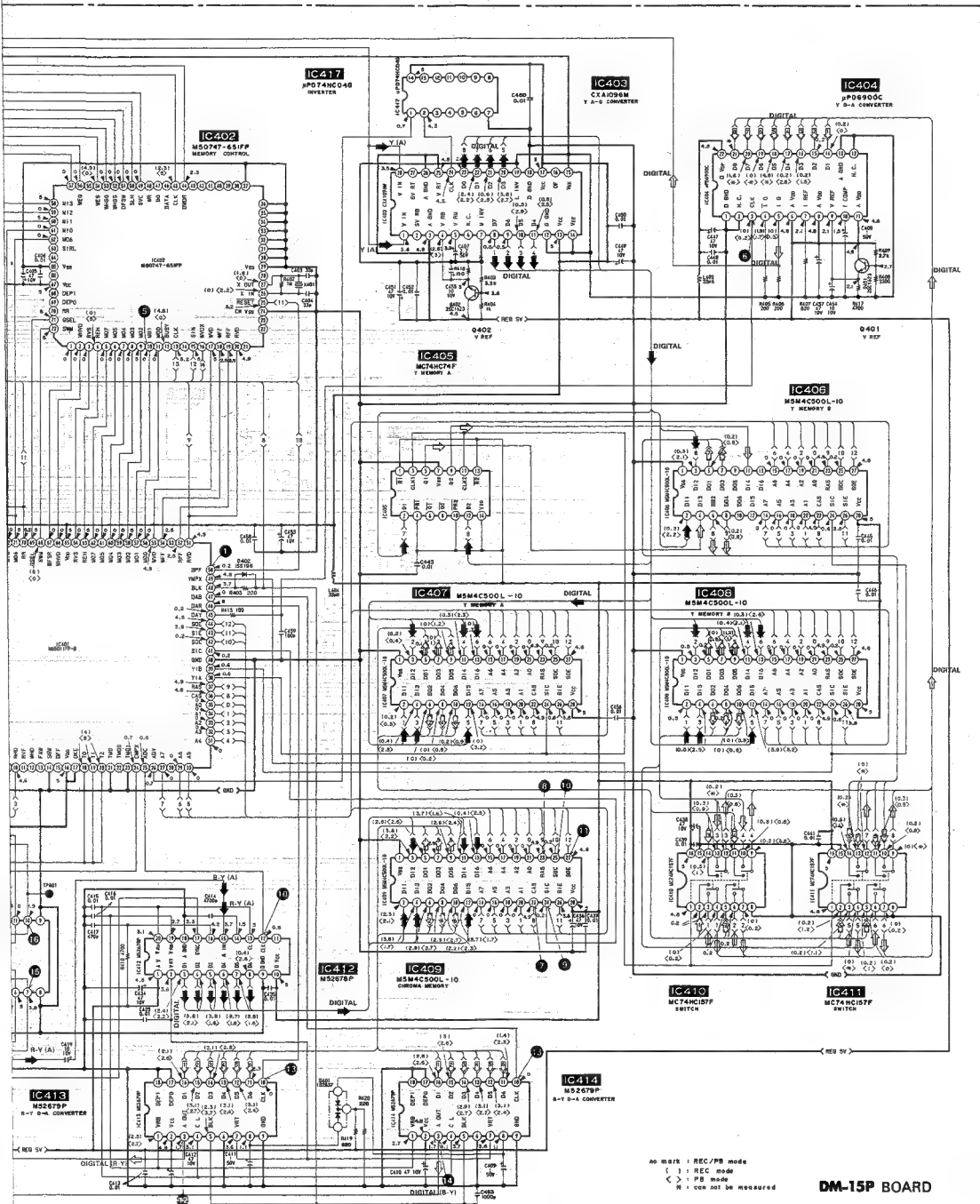
DM-15P (DIGITAL MEMORY) SCHEMATIC DIAGRAM

— Ref. No. DM-15P BOARD: 6,000 series —

- ➡ : REC Y Signal
- ⇄ : PB Y Signal
- ➡ : REC CHROMA Signal
- ⇄ : PB CHROMA Signal

TO DM-15P BOARD
CH009
(See page 174.)





no mark : REC/PB mode
 < : REC mode
 > : PB mode
 * : can not be measured

DM-15P BOARD

EDITOR BLOCK



MA-22 (MAIN AUDIO SWITCH) PRINTED WIRING BOARD

— Ref. No. MA-22 BOARD: 7,000 series —

EDITOR BLOCK

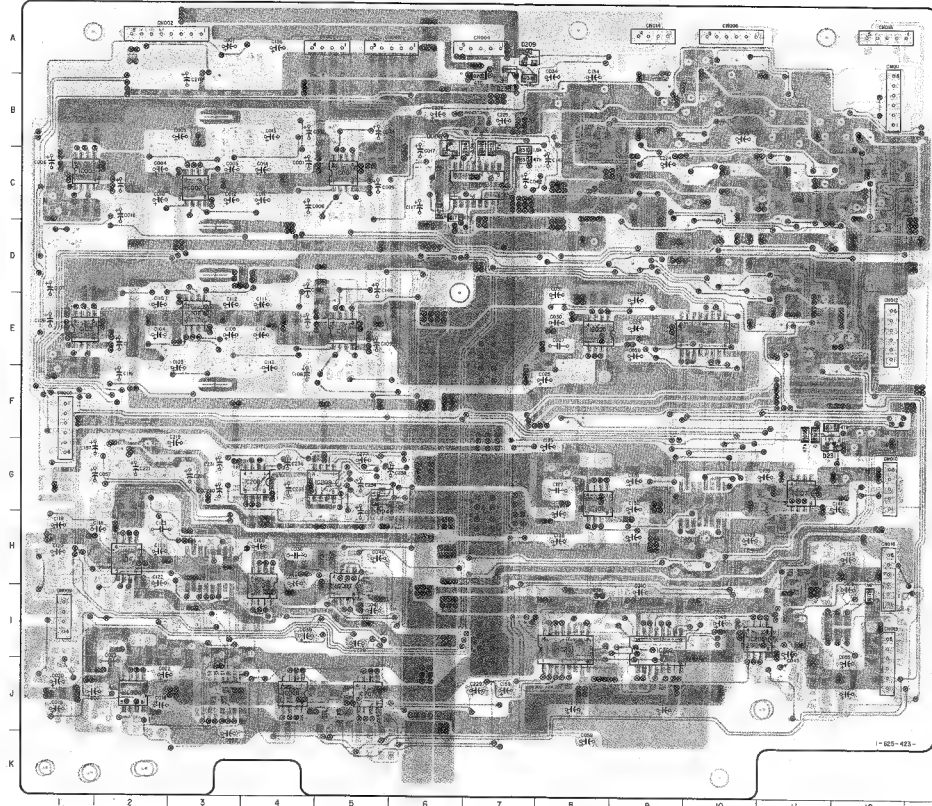
MA-22 BOARD

CN001 A-5
CN002 A-2
CN003 A-6
CN004 A-7
CN005 A-10
CN006 A-12
CN007 A-12
CN008 A-12
CN009 A-12
CN010 A-12
CN011 A-12
CN012 A-12
CN013 A-12
CN014 A-9
CN015 A-9
CN016 H-12

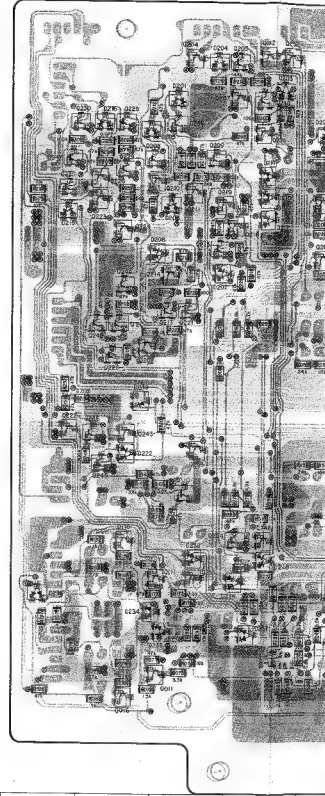
D001 B-23
D002 B-23
D003 B-16
D004 B-16
D005 B-17
D006 B-17
D007 B-18
D008 B-18
D009 B-18
D010 B-18
D011 B-18
D012 B-18
D013 B-18
D014 B-18
D015 B-18
D016 B-18
D017 B-18
D018 B-18
D019 B-18
D020 B-18
D021 B-18
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D024 B-18
D025 B-18
D026 B-18
D027 B-18
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D031 B-18
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D098 B-18
D099 B-18
D100 B-18

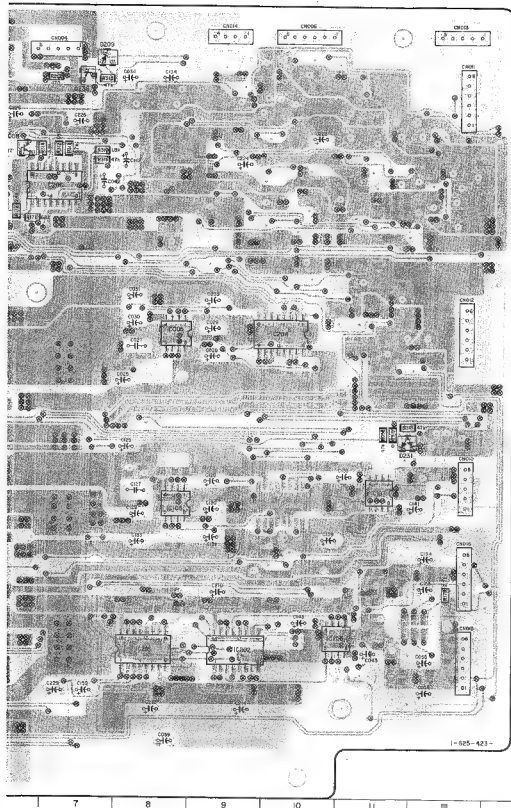
K001 D-5
K002 D-5
K003 D-5
K004 D-5
K005 D-5
K006 D-5
K007 D-5
K008 D-5
K009 D-5
K010 D-5
K011 D-5
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K093 D-5
K094 D-5
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K099 D-5
K100 D-5

MA-22 BOARD (COMPONENT SIDE)

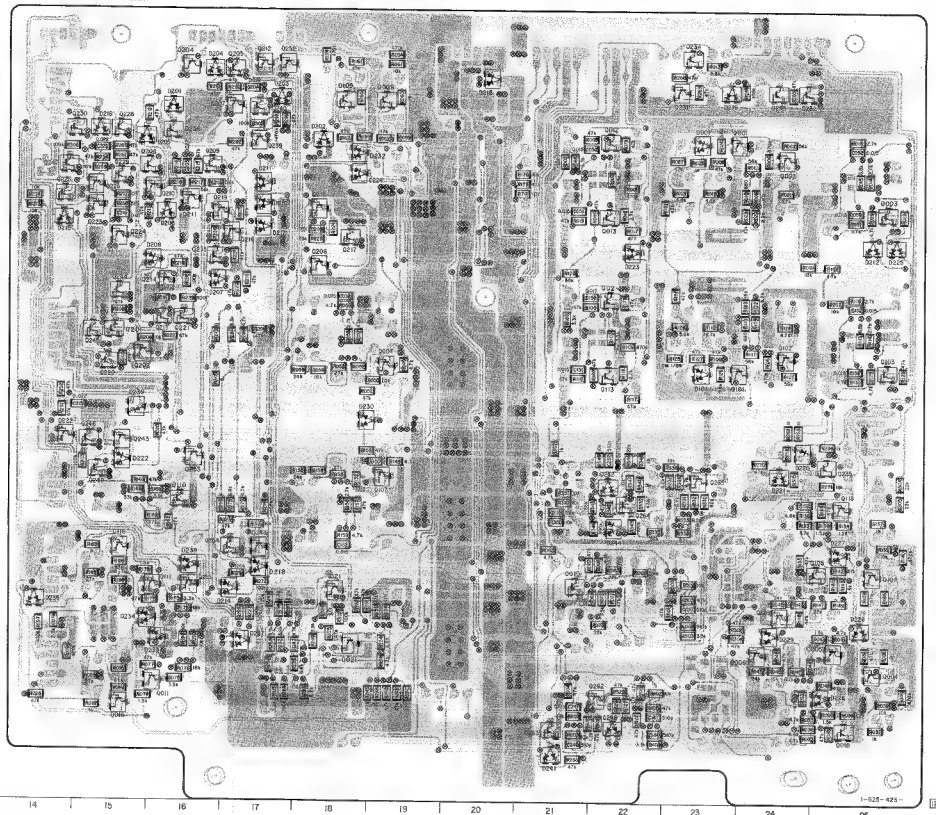


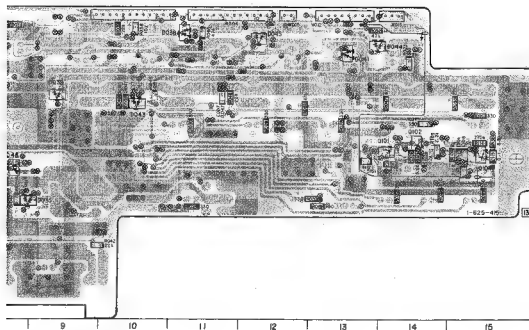
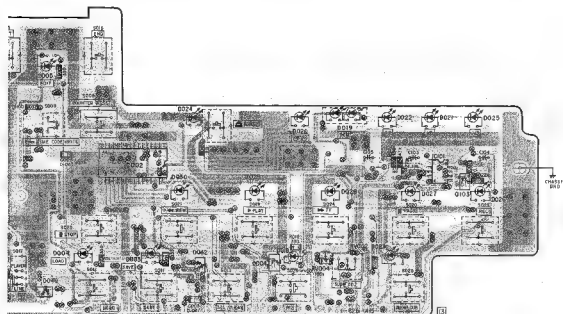
MA-22 BOARD (CONNECTOR SIDE)





MA-22 BOARD (CONDUCTOR SIDE)

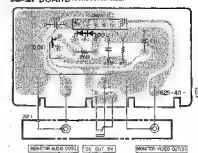




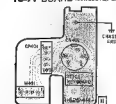
TR-26P BOARD (CONDUCTOR SIDE)



JB-2P BOARD (CONDUCTOR SIDE)



TC-7P BOARD (CONDUCTOR SIDE)



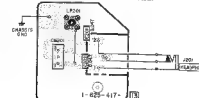
CC-11 BOARD (COMPONENT SIDE)



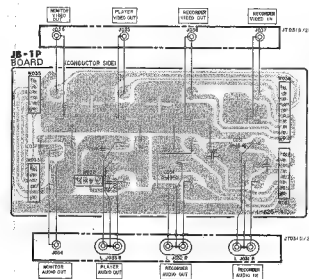
CC-11 BOARD (CONDUCTOR SIDE)



HE-1 BOARD (COMPONENT SIDE)



ML-15 BOARD (COMPONENT SIDE)



EDITOR BLOCK

FB-2P BOARD

DN006 F-2

DN001 A-1

DN002 B-1

DN003 D-10

DN004 D-9

DN005 A-9

DN006 C-4

DN007 C-6

DN008 C-6

DN009 C-7

DN010 B-7

DN011 B-2

DN012 B-6

DN013 B-6

DN014 B-6

DN015 B-4

DN016 B-5

DN017 B-7

DN018 D-12

DN019 D-13

DN020 B-12

DN021 B-14

DN022 B-14

DN023 D-14

DN024 B-11

DN025 B-15

DN026 C-15

DN027 C-14

DN028 C-13

DN029 C-12

DN030 C-11

DN031 F-5

DN032 F-7

DN033 H-3

DN034 H-3

DN035 I-9

DN037 F-8

DN038 F-11

DN039 G-9

DN040 D-9

DN041 F-13

DN042 D-11

DN043 G-10

DN044 F-14

DN045 F-12

DN046 H-5

DN001 C-7

DN002 C-10

DN003 C-14

DN004 C-3

DN005 H-1

DN006 D-7

DN007 D-12

DN008 H-14

DN009 H-14

DN010 C-15

DN011 H-15

DN012 H-4

DN013 G-3

DN014 D-4

DN015 D-3

DN016 D-6

DN017 D-13

DN018 D-6

DN019 D-13

DN020 D-3

DN021 F-7

DN022 F-5

DN023 F-11

DN024 F-10

DN025 F-7

DN026 F-3

DN027 F-4

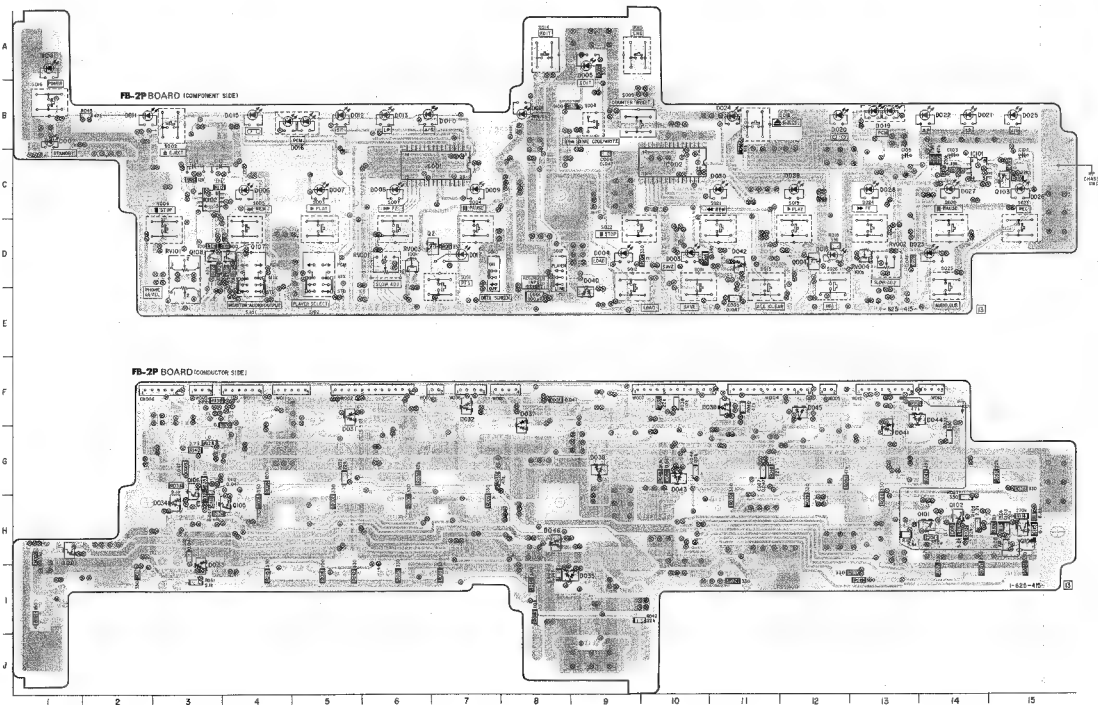
DN028 F-4

DN029 F-4

DN030 F-3

DN031 F-13

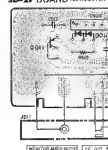
DN032 F-14



TR-26P BOARD (CONDUCTOR SIDE)

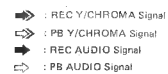


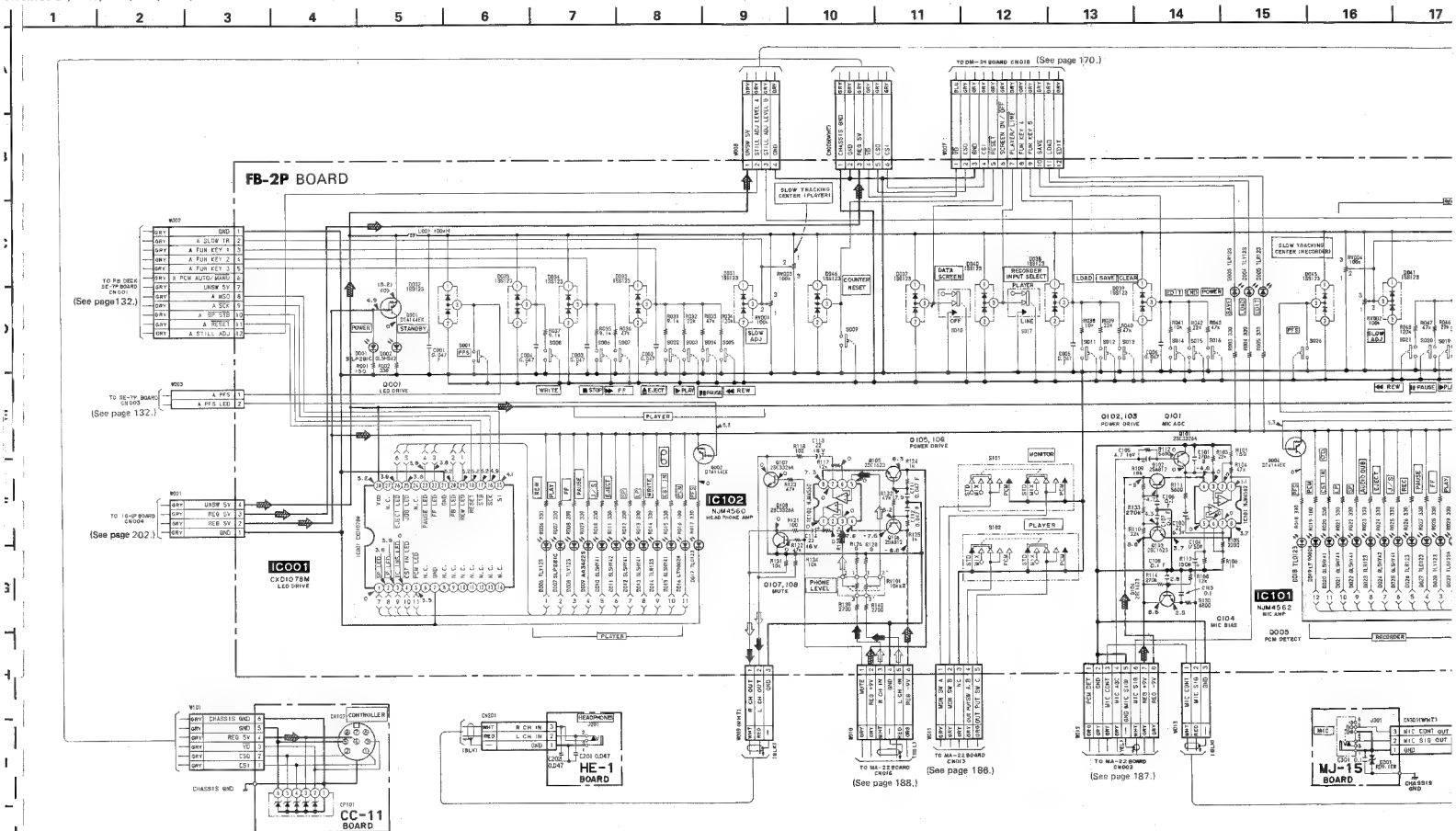
JB-1P BOARD (CONDUCTOR SIDE)

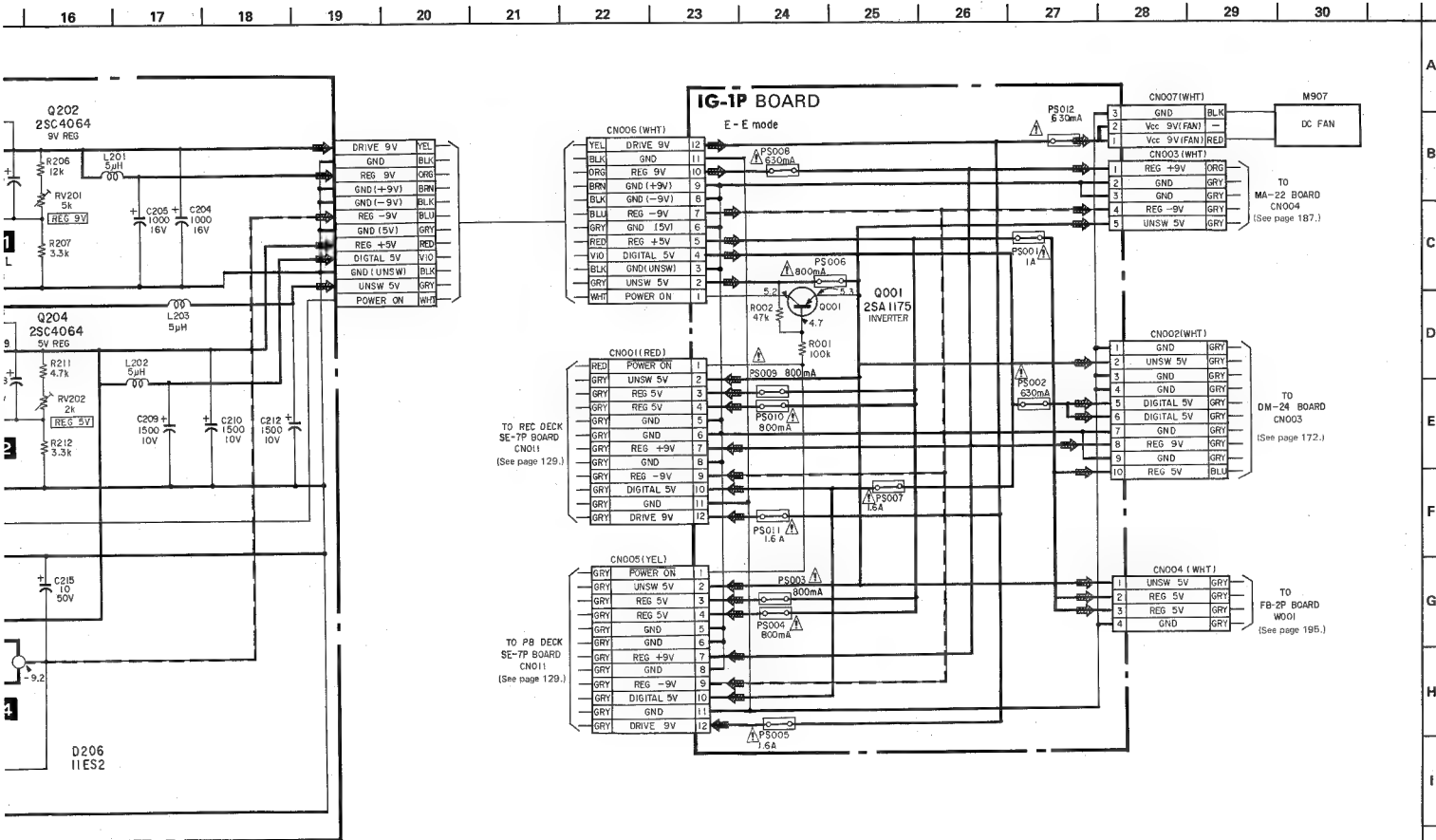


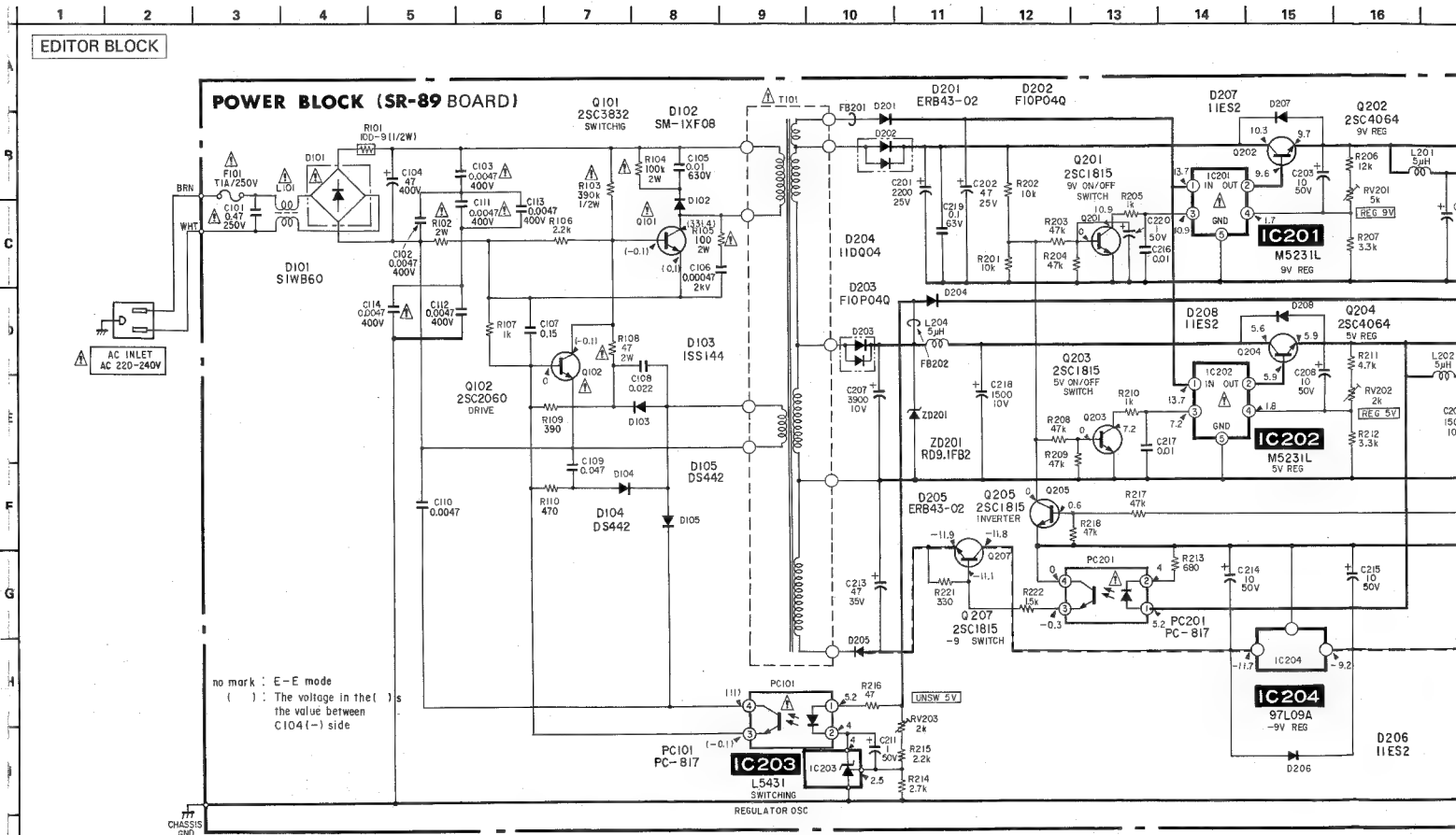
HE-1 BOARD (CONDUCTOR SIDE)



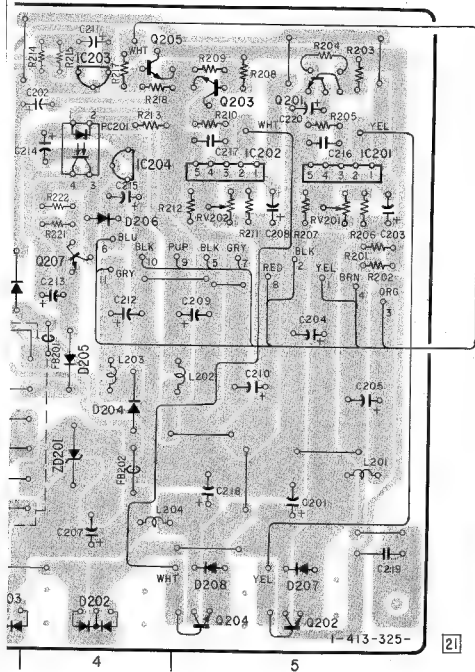




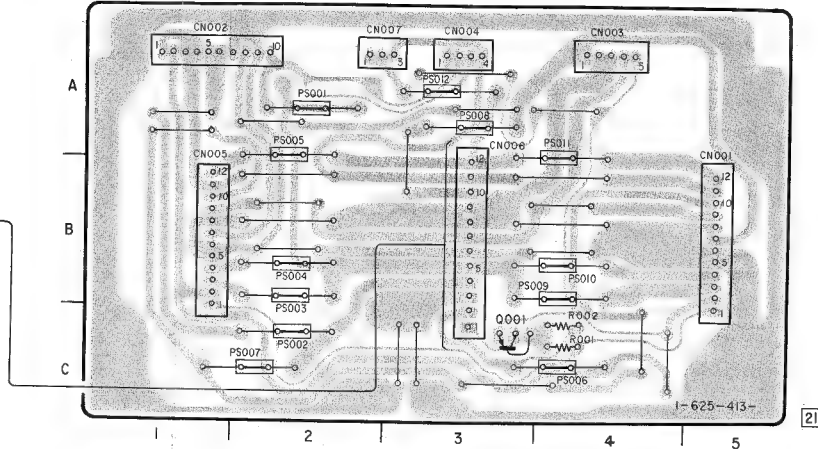




2 SIDE1

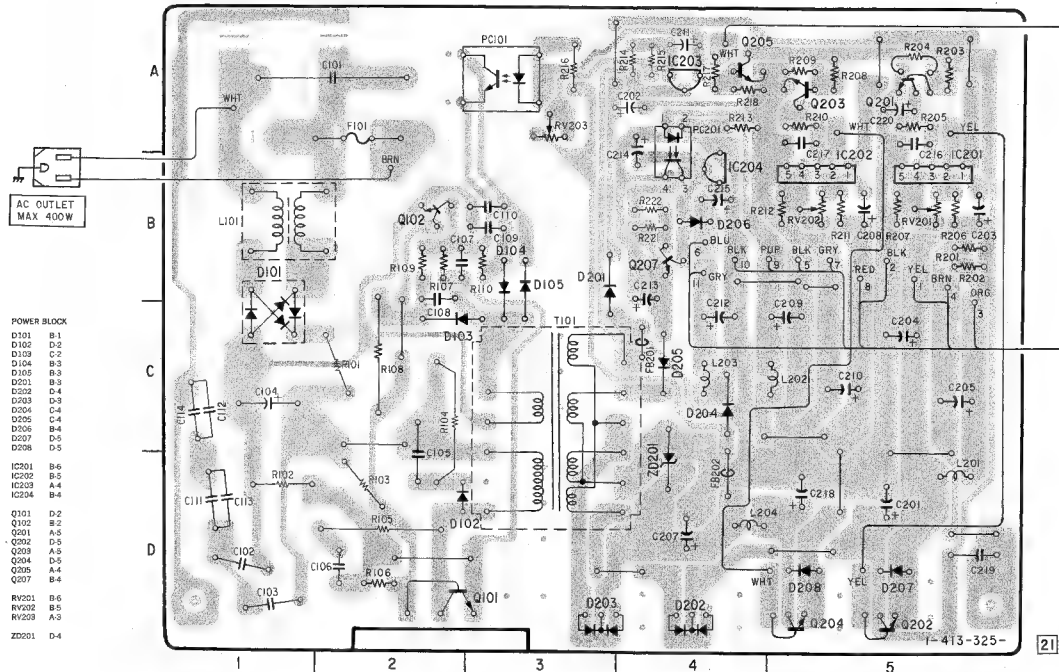


IG-1P BOARD (CONDUCTOR SIDE)

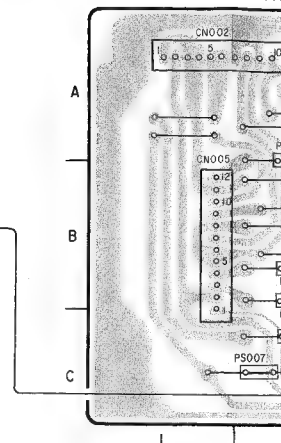


EDITOR BLOCK

POWER BLOCK (SR-89 BOARD) (CONDUCTOR SIDE)



IG-1P BOARD (CONDUCTOR SIDE)



SECTION 5 EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark **A** or dotted line with mark **A** are critical for safety. Replace only with part number specified.

5-1. FRONT PANEL AND CABINET ASSEMBLIES

-SHS42
-SHY42



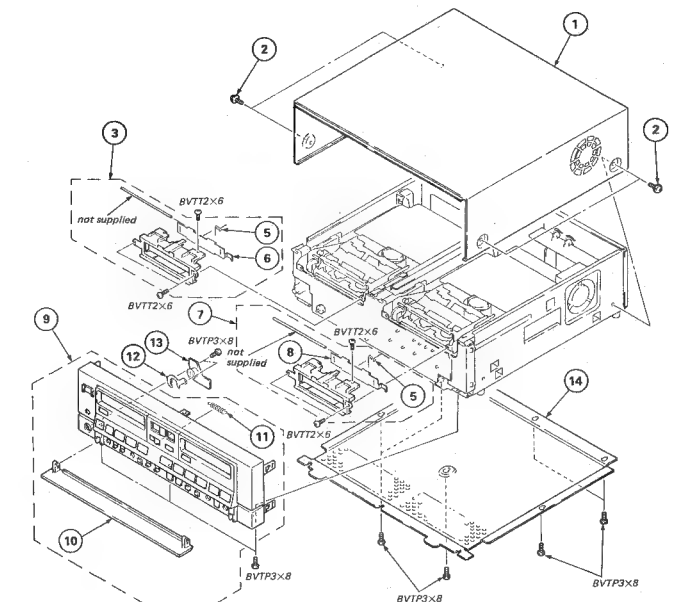
L-450S



-9002N

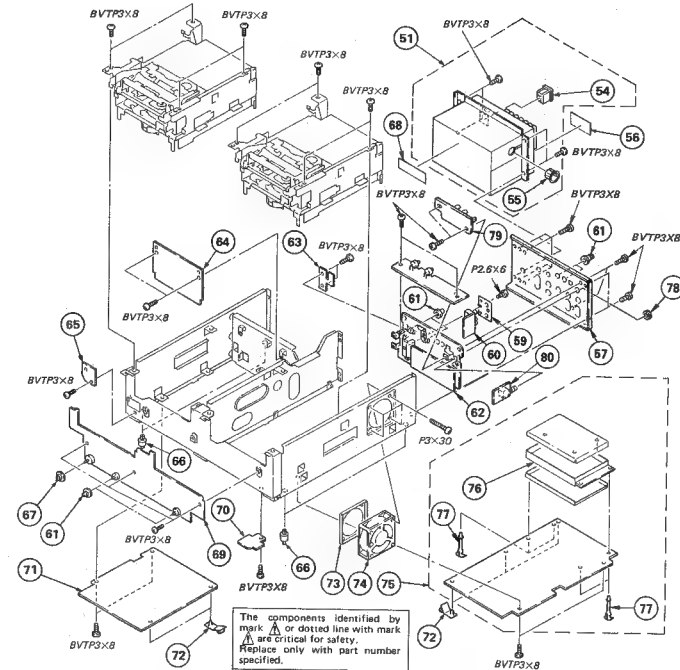


3422S
P2810C-50
G123A
Y123



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	*3-724-167-01	CASE, UPPER		9	X-3691-919-1	PANEL ASSY, FRONT	10, 11
2	4-696-021-11	SCREEN, M3 CASE		10	X-3691-918-1	DOOR ASSY	
3	X-3689-097-1	WINDOW ASSY (P)	5, 6	11	3-689-631-01	SPRING, TENSION	
4	3-695-766-01	SPRINGS, TORSION		12	*3-724-111-01	HOLDER, CONNECTOR	
5	3-721-101-11	DOOR (PLAYER)		13	*A-7070-620-A	CC-11 BOARD, COMPLETE	
6	X-3689-096-1	WINDOW ASSY (R)	5, 8	14	*3-724-168-01	PLATE, BOTTOM	
7	3-721-101-21	DOOR (RECORDER)					

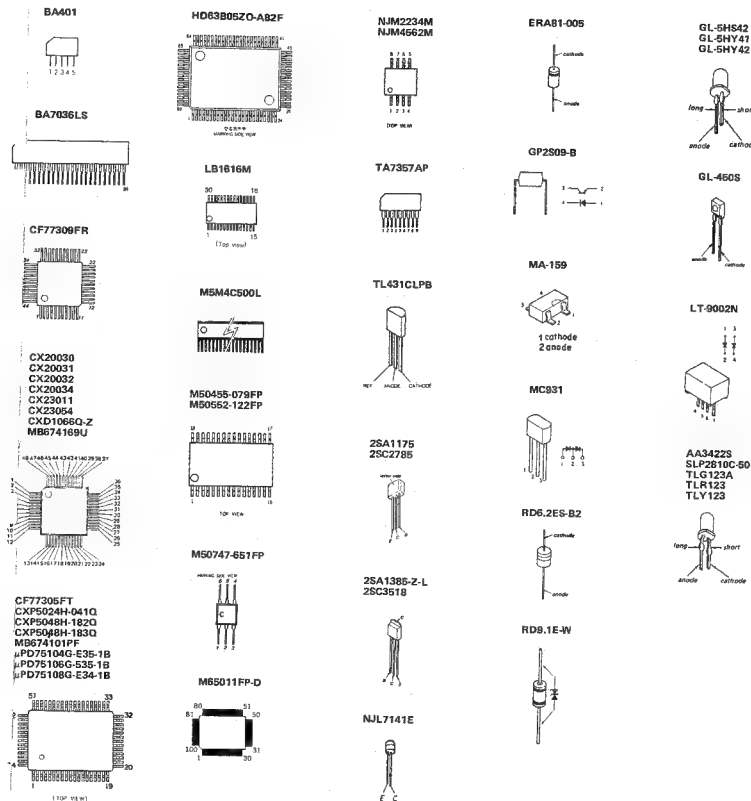
5-2. PC BOARDS AND POWER SUPPLY ASSEMBLIES



The components identified by mark **A** or dotted line with mark **A** are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
51	A-1-413-412-11	POWER BLOCK		67	*3-724-112-01	KNOB, PHONE	
54	A-1-526-954-11	AC INLET	54, 55	68	*3-697-993-01	LABEL, FUSE RATING	
55	9-993-728-01	BUSHING		69	*A-7070-815-A	PB-2 (P) BOARD, COMPLETE	
56	*3-724-161-01	PANEL, MODEL NUMBER		70	*A-7070-614-A	M3-15 BOARD, COMPLETE	
57	*3-724-157-21	PANEL, REAR		71	*A-7061-043-A	MA-22 BOARD, COMPLETE	
58	*A-7070-615-A	TR-26 (P) BOARD, COMPLETE		72	*3-696-448-01	HINGE, SS	
59	*3-724-110-01	PLATE, BLIND, JACK		73	*3-697-996-01	BRACKET, FAN	
60	*A-7070-618-A	JB-2 (P) BOARD, COMPLETE		74	1-541-360-21	MOTOR, DC BLUSHLESS FAN (M907)	
61	*3-724-113-01	KNOB, ADJUST		75	*A-7061-508-A	DM-24 BOARD, COMPLETE	
62	*A-7070-617-A	JB-1 (P) BOARD, COMPLETE		76	*A-7061-509-A	DM-15 (P) BOARD, COMPLETE	76, 77
63	*A-7070-616-A	TC-7 (P) BOARD, COMPLETE		77	*3-704-199-61	SUPPORT, PC	
64	*A-7070-822-A	HE-1 (P) BOARD, COMPLETE		78	3-724-182-01	NUT (SMALL JACK), M6	
65	*A-7070-613-A	HE-1 BOARD, COMPLETE		79	*A-7070-825-A	CO-3 BOARD, COMPLETE	
66	3-694-479-01	FOOT		80	*A-7070-826-A	CO-4 BOARD, COMPLETE	

4-3. SEMICONDUCTORS



SECTION 5 EXPLODED VIEWS

NOTE:

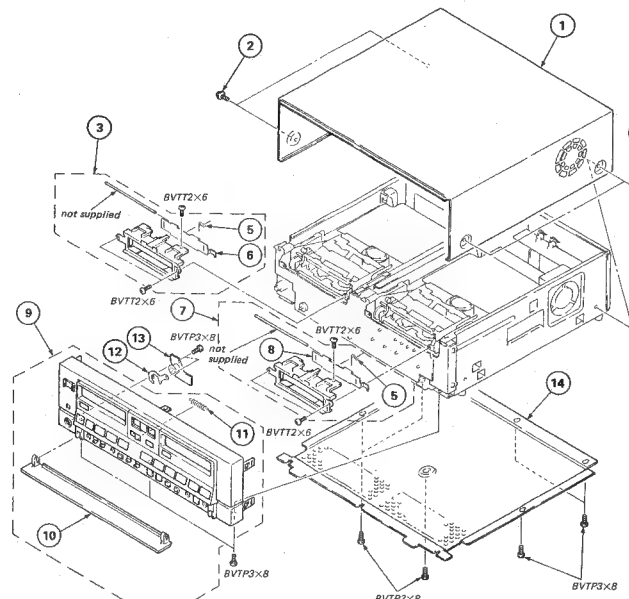
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked "A" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark **A** or dotted line with mark **A** are critical for safety. Replace only with part number specified.

5-2. PC

5-1. FRONT PANEL AND CABINET ASSEMBLIES

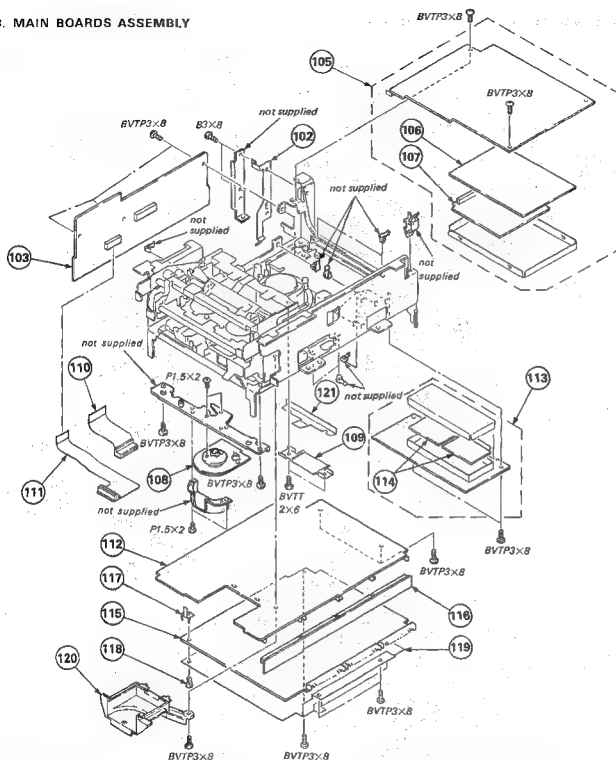


No.	Part No.	Description
1	*3-724-167-01	CASE, UPPER
2	4-886-821-11	SCREW, M3 CASE
3	X-3689-097-1	WINDOW ASSY (P)
4	3-695-766-01	SPRING, TORSION
5	3-721-101-11	DOOR (PLAYER)
6	X-3689-096-1	WINDOW ASSY (R)
7	3-721-101-21	DOOR (RECORDER)

Remark	No.	Part No.	Description	Remark
	9	X-3691-919-1	PANEL ASSY, FRONT	
	10	X-3691-918-1	DOOR ASSY	10, 11
5, 6	11	3-689-531-01	SPRING, TENSION	
	12	*3-724-111-01	HOLDER, CONNECTOR	
	13	*A-7070-620-A	CC-11 BOARD, COMPLETE	
5, 8	14	*3-724-168-01	PLATE, BOTTOM	

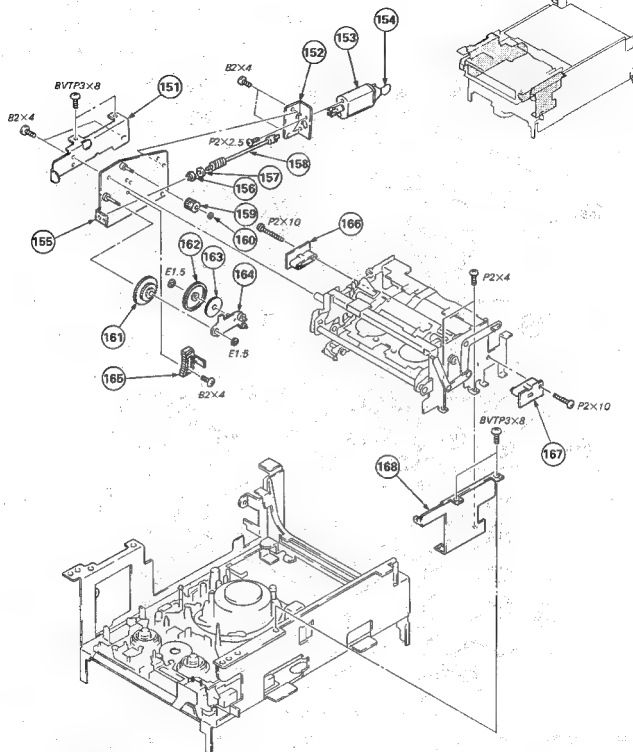
No.	Pa
51	Δ. 1-
54	Δ. 1-
55	0-
56	*3-
57	*3-
58	*A-
59	*3-
60	*A-
61	3-
62	*A-
63	*A-
64	*A-
65	*A-
66	3-

3. MAIN BOARDS ASSEMBLY



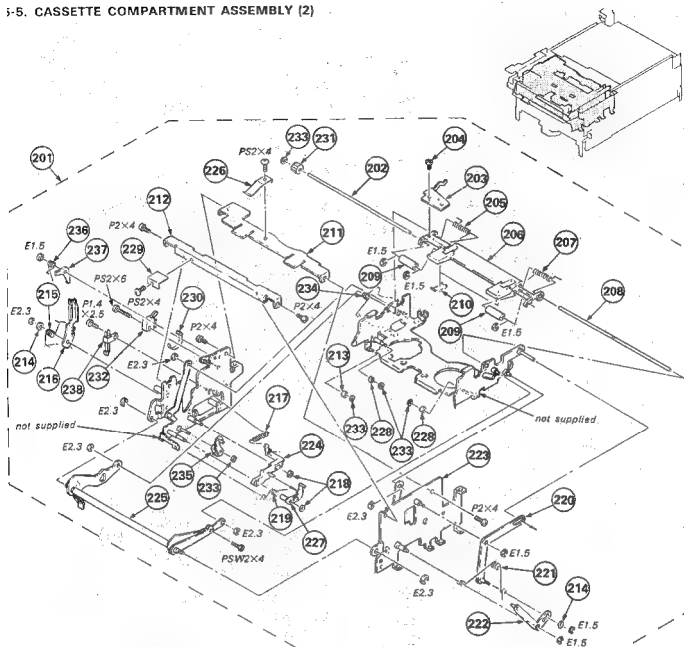
No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
102	*3-724-105-01	PLATE, LOCK, PC BOARD		113	*A-7061-502-A	FR-30 (P) BOARD, COMPLETE	114
103	*A-7061-500-A	MD-18 (P) BOARD, COMPLETE	110, 111	114	*A-7061-503-A	FR-52 (P) BOARD, COMPLETE	
105	*A-7061-505-A	MB-9 (P) BOARD, COMPLETE	106, 107	115	*A-7061-501-A	IK-3 BOARD, COMPLETE	
106	*A-7061-506-A	PD-16 (P) BOARD, COMPLETE		116	*A-7070-623-8	IG-2 BOARD, COMPLETE	
107	*A-7061-048-A	PA-11 (P) BOARD, COMPLETE		117	*3-724-107-01	RETAINER, PC BOARD	
108	B-835-304-01	MOTOR, DC U-118 (REEL MOTOR) (H902)		118	3-531-576-01	RIVET	
109	*3-724-126-01	RETAINER, FLEXIBLE		119	*3-724-175-01	PLATE, SHIELD, CORE	
110	*A-7070-624-A	FF-84 BOARD, COMPLETE		120	*3-697-992-01	GUARD, REEL MOTOR	
111	*A-7070-625-A	FP-122 BOARD, COMPLETE		121	*3-724-106-01	PLATE, GUARD, FLEXIBLE	
112	*A-7061-504-A	SE-7 (P) BOARD, COMPLETE	116				

5-4. CASSETTE COMPARTMENT ASSEMBLY (1)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
151	*3-724-140-01	BRACKET (LEFT)		160	3-669-465-00	WASHER (1.5), STOPPER	
152	*3-713-431-01	BRACKET, MOTOR		161	3-713-433-01	GEAR (A)	
153	X-3711-936-1	MOTOR ASSY, FL (CASSETTE LOADING) (#904)		162	3-713-430-01	GEAR (B)	
154	1-161-057-00	CAP, CERAMIC 0.033MF X		163	*3-713-441-01	SPRING, LEAF	
155	*X-3711-934-1	PLATE SUB ASSY, BLOCK		164	X-3714-193-1	LEVER ASSY (B), GEAR	
156	3-713-439-01	BEARING		165	3-724-913-02	RACK	
157	3-701-437-11	WASHER		166	*A-7070-628-A	TS-74 (LEFT) BOARD, COMPLETE	
158	X-3711-936-3	SHAFT ASSY, WORM		167	*A-7070-627-A	TS-74 (RIGHT) BOARD, COMPLETE	
159	3-713-452-01	GEAR (C)		168	*3-724-141-01	BRACKET (RIGHT)	

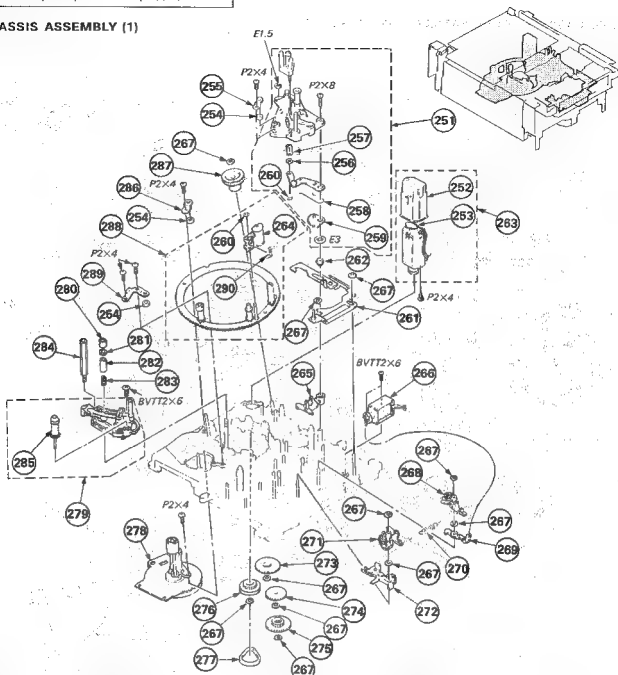
3-5. CASSETTE COMPARTMENT ASSEMBLY (2)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
201	A-7090-558-F	CASSETTE COMPARTMENT BLOCK ASSY	202-238	220	X-3711-930-1	LEVER ASSY, HOLDER	
202	*3-713-440-01	SHAFT, ROLLER		221	3-713-628-01	SPRING, TORSION	
203	3-713-492-01	PLATE, FUNCTION, LEVER		222	X-3711-931-4	LEVER ASSY, DOOR	
204	3-713-622-01	SCREW (M1.3X4), TAPPING, O		223	*X-3711-932-1	PLATE (R) ASSY, SIDE	
205	3-713-445-01	SPRING (LEFT)		224	3-721-136-01	SLIDER, LOCK	
206	3-713-625-01	COVER, MULTI		225	*X-3711-937-1	JOINT ASSY	
207	3-713-442-01	SPRING (RIGHT)		226	3-713-658-01	SPRING	
208	*3-713-457-01	SHAFT, JOINT		227	3-686-692-01	PREVENTION, SLIDER	
209	3-713-466-01	ROLLER		228	3-719-590-01	ROLLER, ASSIST	
210	3-713-625-01	SHOE, BRAKE		229	3-716-921-01	SPRING, LEAF	
211	*3-713-462-01	STOPPER, HOLDER		230	*3-337-402-01	BAND, BINDING	
212	*3-713-458-01	REINFORCEMENT		231	3-713-429-01	GEAR (D)	
213	*3-686-693-01	ROLLER, LOCK		232	1-570-407-11	SWITCH, SLIDE (CASSETTE LOADING) (S901)	
214	3-533-073-01	WASHER		233	3-578-265-11	WASHER, STOPPER	
215	3-713-468-01	SPRING (2), TORSION		234	3-713-620-01	SPRING (1), TORSION	
216	3-721-125-01	LEVER, LOCK		235	*X-3686-541-1	CLAW ASSY, LOCK	
217	3-696-047-01	SPRING, TENSION		236	3-721-163-01	SPRING	
218	3-569-465-00	WASHER (1.5), STOPPER		237	3-721-166-01	LEVER, SWITCH	
219	3-686-694-01	SPRING, TORSION		238	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK) (S903)	

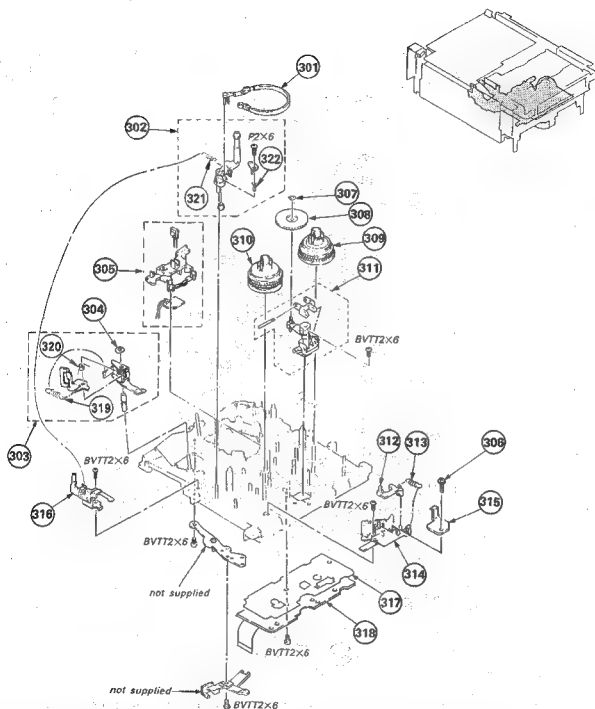
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

5-6. CHASSIS ASSEMBLY (1)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
251	A-7040-001-A	GUIDE BLOCK ASSY, SLANT	256-260	271	X-3711-991-1	BRAKE ASSY, S MAIN	
252	*3-686-757-01	CAP, SHIELD, L MOTOR		272	*3-686-629-01	SLIDER, SELECTION, UPPER & LOWER	
253	1-161-057-00	CAP, CERAMIC 0.033MF X (FOR M904, M906)		273	3-686-508-01	GEAR, NO.2	
254	3-697-538-01	ROLLER, RING		274	3-686-545-01	GEAR, NO.3	
255	*3-686-503-01	RETAINER, ROLLER		275	3-686-544-01	GEAR, NO.4	
256	3-701-436-21	WASHER, POLYETHYLENE		276	X-3686-514-1	GEAR ASSY, NO.1	
257	3-686-663-01	WASHER, STOPPER, 2 GANG		277	3-686-546-01	HELT, L- MOTOR	
258	3-686-701-01	SPRING		278	B-835-196-11	MOTOR, DC BHF-2802A (CAPSTAN) (M903)	
259	3-699-509-01	GEAR, SECTOR		279	A-7040-054-A	GUIDE (P) ASSY, ENTRANCE	285
260	3-315-384-31	WASHER, STOPPER		280	3-686-724-01	NUT, GUIDE	
261	A-7040-103-A	SLIDER ASSY, LOCK		281	*3-686-894-01	FLANGE, #3 #4 GUIDE	
262	3-686-537-01	RETAINER, LOCK SLIDER		282	3-686-912-01	GUIDE, #3 #4	
263	A-7040-065-A	MOTOR ASSY, L (LOADING) (M906) 252, 253		283	3-699-609-01	SPRING, COMPRESSION	
264	X-3686-576-3	ARM ASSY, PINCH ROLLER		284	3-686-561-01	SCREW, DRUM GUARD	
265	*3-686-636-04	ARM, T.S RELEASE		285	X-3686-676-1	GUIDE ASSY, #2	
266	Δ 1-454-377-31	SOLENOID, PLUNGER (PM901)		286	*3-686-911-01	PLATE, TOP, ROLLER	
267	3-669-465-00	WASHER (1.5), STOPPER		287	3-697-518-01	GEAR, NO.10	
268	X-3686-574-1	BRAKE ASSY, MAIN, TAKE-UP		288	A-7040-123-A	RING ASSY, THREADING	260, 264, 290
269	*3-696-635-01	ARM, P		289	*3-686-675-01	STOPPER, RING	
270	3-686-882-01	SPRING, TENSION		290	3-686-566-01	SPRING, TORSION	

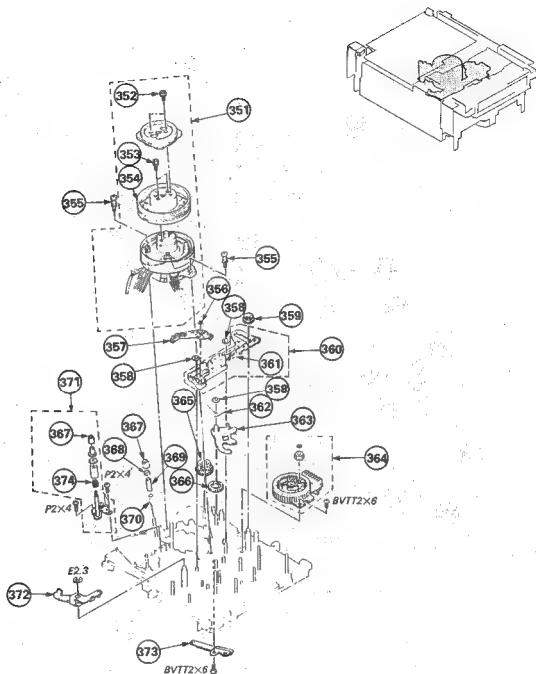
5-7. CHASSIS ASSEMBLY (2)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
301	X-3686-531-1	BAND ASSY, TENSION REGULATOR		312	*3-686-637-01	BRAKE (S), SOFT	
302	A-7040-071-A	ARM ASSY, TENSION REGULATOR	321, 322	313	3-696-082-01	SPRING, TENSION	
303	A-7040-008-A	ARM ASSY, PINCH PRESS	319, 320	314	*3-686-760-01	GUIDE, BAND	
304	3-669-465-00	WASHER (1.5), STOPPER		315	*3-686-991-01	STOPPER, REEL TABLE	
305	*A-7070-024-A	LD-1 BOARD, COMPLETE		316	*X-3686-525-1	HOOK ASSY, SPRING	
306	3-669-480-11	+ PTPWH 2		317	3-712-411-01	INSULATOR, RS	
307	3-315-384-31	WASHER, STOPPER		318	*A-7061-044-A	RS-28 BOARD, COMPLETE	
308	X-3686-763-1	GEAR (5) ASSY, DRIVING		319	3-686-885-01	SPRING, TENSION	
309	X-3711-998-1	TABLE ASSY, REEL, TAKE-UP		320	3-686-568-01	SPRING, TENSION	
310	X-3713-427-1	TABLE ASSY, REEL, SUPPLY		321	3-699-519-01	SPRING, TENSION	
311	X-3711-963-1	DRIVING COMPLETE ASSY		322	3-669-666-00	SPRING, COMPRESSION	

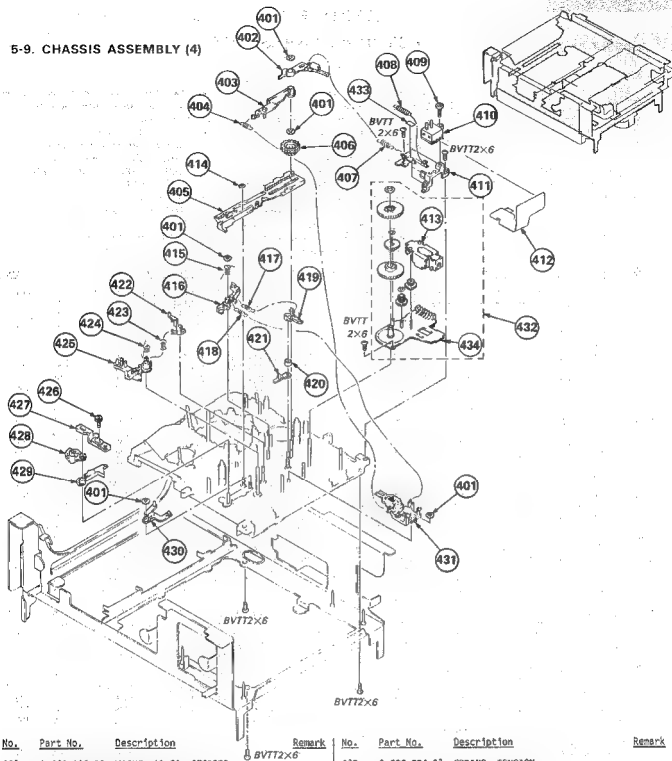
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

5-8. CHASSIS ASSEMBLY (3)



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
351	Δ A-7048-102-A	DRUM ASSY (DGR-120-R)	352-354	363	X-3686-579-1	CHARGE ASSY, DRIVE	
352	3-686-422-01	WASHER (2X2.7), BOLT HOLE		364	X-3712-403-1	L-SW ASSY	
353	3-686-403-00	SCREW (2X5), BOLT WASHER		365	3-686-539-01	GEAR, NO.9	
354	A-7049-121-A	DRUM ASSY, ROTARY UPPER (DGR-12-R)		366	3-686-535-01	GEAR, NO.8	
355	X-3686-569-1	SCREW ASSY, FITTING		367	3-686-724-01	NUT, GUIDE	
356	3-315-384-31	WASHER, STOPPER		368	*3-686-894-01	FLANGE, #3 #4 GUIDE	
357	*X-3686-518-3	ARM ASSY		369	3-686-912-01	GUIDE, #3 #4	
358	3-669-465-00	WASHER (1.5), STOPPER		370	3-699-609-01	SPRING, COMPRESSION	
359	3-686-702-01	GEAR, DRIVING, GUIDE, SLANT		371	A-7040-058-A	GUIDE BLOCK COMPLETE ASSY, #5	367, 374
360	*A-7040-010-A	SLIDER ASSY, L	361	372	*X-3686-509-1	LEVER ASSY, PINCH PRESS	
361	3-686-886-01	SPRING, TENSION		373	1-535-535-11	TERMINAL, SHAFT GROUND	
362	3-686-540-01	SPRING, TORSION		374	3-699-514-01	SPRING, COMPRESSION	

5-9. CHASSIS ASSEMBLY (4)



No.	Part No.	Description	Remark
401	3-669-465-00	WASHER (1.5), STOPPER	
402	X-3711-987-2	BRAKE ASSY, T.S	
403	*X-3686-528-4	ARM ASSY, B RELEASE	
404	3-686-903-01	SPRING, TENSION	
405	3-716-935-01	SLIDER, M	
406	3-686-909-01	GEAR, MODE OUTPUT	
407	3-714-035-01	SPRING, TENSION	
408	3-699-650-01	SPRING, TENSION	
409	3-689-480-11	+ PTPWH 2	
410	1-554-942-11	SWITCH, PUSH (RECOG) (S904)	
411	X-3711-992-1	COVER ASSY, C MOTOR	433
412	1-619-921-11	PC BOARD, FP-19 FLEXIBLE	
413	8-835-138-01	MOTOR, DC (DRR-5301B) (CONTROL) (M905)	
414	3-315-384-31	WASHER, STOPPER	
415	3-686-579-01	SPRING	
416	*3-686-634-01	ARM, RL	
417	3-686-906-01	SPRING, TENSION	

No.	Part No.	Description	Remark
418	3-686-904-01	SPRING, TENSION	
419	X-3711-993-1	BRAKE ASSY, REM	
420	3-716-933-01	SPACER, REM BRAKE	
421	*3-686-580-01	ARM, SET UP	
422	3-686-996-01	BRAKE (S), HARD	
423	3-686-905-02	SPRING, TENSION	
424	3-686-603-04	SPRING	
425	*3-686-644-01	ARM, BAND	
426	3-686-528-01	SCREW (2X6); +	
427	*3-686-642-01	PLATE, ADJUSTMENT, BAND	
428	*3-686-755-01	DISK, EJECT	
429	*3-686-643-01	ARM, MODE	
430	*X-3686-530-1	ARM (A) ASSY, SELECTION	
431	*3-686-656-01	SLIDER, M RELEASE	
432	A-7090-029-A	M-SW ASSY	413, 434
433	3-716-963-01	SHOE, C MOTOR COVER	
434	*A-7090-029-A	MS-A BOARD, COMPLETE	

MA-22

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark **A** or dotted line with mark **A** are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.

RESISTORS

All resistors are in ohms

METAL: Metal-film resistor

METAL OXIDE: Metal Oxide-film resistor

F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- XX, -X mean standardized parts, so they may have some differences from the original one.

SEMICONDUCTORS

In each case, U: μ , for example:

UA... μ A... UPA... μ PA...

UPB... μ B... UPC... μ C...

UPD... μ D...

CAPACITORS

MF: μ F, PF: μ F

COILS

MMH: mH, UH: μ H

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7051-043-A MA-22 BOARD, COMPLETE (Ref.No.7,000 Series)				C060	1-163-134-00	CERAMIC CHIP 510PF	5% 50V
CAPACITOR				C061	1-163-134-00	CERAMIC CHIP 510PF	5% 50V
C001	1-124-234-00	ELECT 22MF	20% 10V	C101	1-124-234-00	ELECT 22MF	20% 10V
C002	1-124-234-00	ELECT 22MF	20% 10V	C102	1-124-234-00	ELECT 22MF	20% 10V
C003	1-126-094-11	ELECT 4.7MF	20% 16V	C103	1-126-094-11	ELECT 4.7MF	20% 16V
C004	1-124-234-00	ELECT 22MF	20% 10V	C104	1-124-234-00	ELECT 22MF	20% 10V
C005	1-124-234-00	ELECT 22MF	20% 10V	C105	1-124-234-00	ELECT 22MF	20% 10V
C006	1-124-234-00	ELECT 22MF	20% 10V	C106	1-124-234-00	ELECT 22MF	20% 10V
C007	1-124-234-00	ELECT 22MF	20% 10V	C107	1-124-234-00	ELECT 22MF	20% 10V
C008	1-124-234-00	ELECT 22MF	20% 10V	C108	1-124-234-00	ELECT 22MF	20% 10V
C009	1-124-234-00	ELECT 22MF	20% 10V	C109	1-124-234-00	ELECT 22MF	20% 10V
C010	1-124-234-00	ELECT 22MF	20% 10V	C110	1-124-234-00	ELECT 22MF	20% 10V
C011	1-124-234-00	ELECT 22MF	20% 10V	C111	1-124-234-00	ELECT 22MF	20% 10V
C012	1-124-234-00	ELECT 22MF	20% 10V	C112	1-124-234-00	ELECT 22MF	20% 10V
C013	1-126-157-11	ELECT 10MF	20% 6.3V	C113	1-126-157-11	ELECT 10MF	20% 6.3V
C014	1-124-257-00	ELECT 2.2MF	20% 35V	C114	1-124-257-00	ELECT 2.2MF	20% 35V
C015	1-124-234-00	ELECT 22MF	20% 10V	C115	1-124-234-00	ELECT 22MF	20% 10V
C016	1-124-234-00	ELECT 22MF	20% 10V	C116	1-124-234-00	ELECT 22MF	20% 10V
C017	1-124-234-00	ELECT 22MF	20% 10V	C117	1-124-234-00	ELECT 22MF	20% 10V
C018	1-124-234-00	ELECT 22MF	20% 10V	C118	1-124-234-00	ELECT 22MF	20% 10V
C019	1-124-234-00	ELECT 22MF	20% 10V	C119	1-124-234-00	ELECT 22MF	20% 10V
C020	1-124-234-00	ELECT 22MF	20% 10V	C120	1-124-234-00	ELECT 22MF	20% 10V
C021	1-124-234-00	ELECT 22MF	20% 10V	C121	1-124-234-00	ELECT 22MF	20% 10V
C022	1-124-584-00	ELECT 100MF	20% 10V	C122	1-124-584-00	ELECT 100MF	20% 10V
C023	1-130-474-00	MYLAR 0.0018MF	5% 50V	C123	1-130-474-00	MYLAR 0.0018MF	5% 50V
C024	1-124-234-00	ELECT 22MF	20% 10V	C125	1-124-234-00	ELECT 22MF	20% 10V
C025	1-130-474-00	MYLAR 0.0018MF	5% 50V	C127	1-130-474-00	MYLAR 0.0018MF	5% 50V
C026	1-124-234-00	ELECT 22MF	20% 10V	C128	1-124-234-00	ELECT 22MF	20% 10V
C027	1-130-474-00	MYLAR 0.0018MF	5% 50V	C129	1-124-234-00	ELECT 22MF	20% 10V
C028	1-124-234-00	ELECT 22MF	20% 10V	C130	1-124-234-00	ELECT 22MF	20% 10V
C029	1-124-234-00	ELECT 22MF	20% 10V	C131	1-124-234-00	ELECT 22MF	20% 10V
C030	1-124-234-00	ELECT 22MF	20% 10V	C132	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C031	1-124-234-00	ELECT 22MF	20% 10V	C133	1-124-234-00	ELECT 22MF	20% 10V
C032	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	C134	1-124-234-00	ELECT 22MF	20% 10V
C033	1-124-234-00	ELECT 22MF	20% 10V	C135	1-124-234-00	ELECT 22MF	20% 10V
C034	1-124-234-00	ELECT 22MF	20% 10V	C136	1-124-234-00	ELECT 22MF	20% 10V
C035	1-124-234-00	ELECT 22MF	20% 10V	C139	1-124-234-00	ELECT 22MF	20% 10V
C036	1-130-474-00	MYLAR 0.0018MF	5% 50V	C141	1-124-234-00	ELECT 22MF	20% 10V
C039	1-124-234-00	ELECT 22MF	20% 10V	C142	1-124-234-00	ELECT 22MF	20% 10V
C040	1-124-234-00	ELECT 22MF	20% 10V	C143	1-124-234-00	ELECT 22MF	20% 10V
C041	1-124-234-00	ELECT 22MF	20% 10V	C149	1-124-234-00	ELECT 22MF	20% 10V
C042	1-124-234-00	ELECT 22MF	20% 10V	C150	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C043	1-124-234-00	ELECT 22MF	20% 10V	C151	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C049	1-124-234-00	ELECT 22MF	20% 10V	C152	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C050	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	C153	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C051	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	C154	1-124-234-00	ELECT 22MF	20% 10V
C052	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	C155	1-124-234-00	ELECT 22MF	20% 10V
C053	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	C157	1-124-234-00	ELECT 22MF	20% 10V
C054	1-124-234-00	ELECT 22MF	20% 10V	C158	1-124-234-00	ELECT 22MF	20% 10V
C055	1-124-234-00	ELECT 22MF	20% 10V	C159	1-124-234-00	ELECT 22MF	20% 10V
C057	1-124-234-00	ELECT 22MF	20% 10V	C160	1-163-134-00	CERAMIC CHIP 510PF	5% 50V
C058	1-124-234-00	ELECT 22MF	20% 10V	C161	1-163-134-00	CERAMIC CHIP 510PF	5% 50V
C059	1-124-234-00	ELECT 22MF	20% 10V	C204	1-163-033-00	CERAMIC CHIP 0.022MF	50V

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
C205	1-163-033-00	CERAMIC CHIP 0.022MF	50V	D203	8-719-100-05	D100E 1S2837	
C206	1-163-021-00	CERAMIC CHIP 0.01MF	50V	D204	8-719-100-05	D100E 1S2837	
C208	1-163-021-00	CERAMIC CHIP 0.01MF	50V	D205	8-719-100-03	D100E 1S2835	
C210	1-124-234-00	ELECT 22MF	20% 10V	D206	8-719-100-05	D100E 1S2837	
C212	1-124-234-00	ELECT 22MF	20% 10V	D207	8-719-100-05	D100E 1S2837	
C214	1-124-234-00	ELECT 22MF	20% 10V	D208	8-719-101-23	D100E 1S5123	
C215	1-163-033-00	CERAMIC CHIP 0.022MF	50V	D209	8-719-101-23	D100E 1S5123	
C216	1-163-021-00	CERAMIC CHIP 0.01MF	50V	D210	8-719-100-03	D100E 1S2835	
C218	1-124-584-00	ELECT 100MF	20% 10V	D211	8-719-100-03	D100E 1S2835	
C219	1-124-234-00	ELECT 22MF	20% 10V	D212	8-719-100-03	D100E 1S2835	
C220	1-126-157-11	ELECT 10MF	20% 6.3V	D213	8-719-100-05	D100E 1S2837	
C221	1-124-237-00	ELECT 2.2MF	20% 35V	D214	8-719-100-05	D100E 1S2837	
C222	1-163-033-00	CERAMIC CHIP 0.022MF	50V	D215	8-719-100-05	D100E 1S2837	
C223	1-124-234-00	ELECT 22MF	20% 10V	D216	8-719-100-03	D100E 1S2835	
C224	1-124-234-00	ELECT 22MF	20% 10V	D217	8-719-100-05	D100E 1S2837	
C225	1-124-584-00	ELECT 100MF	20% 10V	D218	8-719-108-01	D100E 1S5153	
C226	1-124-584-00	ELECT 100MF	20% 10V	D219	8-719-100-05	D100E 1S2837	
C228	1-124-234-00	ELECT 22MF	20% 10V	D220	8-719-108-01	D100E 1S5153	
C229	1-124-234-00	ELECT 22MF	20% 10V	D221	8-719-101-23	D100E 1S5123	
C230	1-124-234-00	ELECT 22MF	20% 10V	D222	8-719-100-05	D100E 1S2837	
C231	1-124-234-00	ELECT 22MF	20% 10V	D223	8-719-100-03	D100E 1S2835	
C233	1-124-234-00	ELECT 22MF	20% 10V	D224	8-719-100-05	D100E 1S2837	
C234	1-126-094-11	ELECT 4.7MF	20% 16V	D225	8-719-100-03	D100E 1S2835	
C235	1-124-257-00	ELECT 2.2MF	20% 35V	D226	8-719-100-03	D100E 1S2835	
C236	1-124-234-00	ELECT 22MF	20% 10V	D227	8-719-100-03	D100E 1S2835	
C237	1-163-134-00	CERAMIC CHIP 510PF	5% 50V	D228	8-719-100-03	D100E 1S2835	
C238	1-163-134-00	CERAMIC CHIP 510PF	5% 50V	D229	8-719-100-03	D100E 1S2835	
C239	1-124-234-00	ELECT 22MF	20% 10V	D230	8-719-100-03	D100E 1S2835	
C240	1-163-134-00	CERAMIC CHIP 510PF	5% 50V	D231	8-719-100-03	D100E 1S2835	
C241	1-163-134-00	CERAMIC CHIP 510PF	5% 50V	D232	8-719-100-03	D100E 1S2835	
C277	1-124-234-00	ELECT 22MF	20% 10V	D233	8-719-100-03	D100E 1S2835	
CONNECTOR				D234	8-719-100-03	D100E 1S2835	
CN001	1-506-469-11	PIN, CONNECTOR 4P		D235	8-719-100-03	D100E 1S2835	
CN002	1-506-473-11	PIN, CONNECTOR 8P		D237	8-719-100-03	D100E 1S2835	
CN003	1-506-470-11	PIN, CONNECTOR 5P		D238	8-719-100-03	D100E 1S2835	
CN004	1-506-470-11	PIN, CONNECTOR 5P		D239	8-719-100-03	D100E 1S2835	
CN005	1-506-485-11	PIN, CONNECTOR 6P		D240	8-719-100-03	D100E 1S2835	
CN006	*1-564-005-41	PIN, CONNECTOR 6P		D241	8-719-100-03	D100E 1S2835	
CN009	*1-564-014-41	PIN, CONNECTOR 4P		D242	8-719-101-23	D100E 1S5123	
CN010	1-506-484-11	PIN, CONNECTOR 5P		D243	8-719-105-54	D100E RD3.6M-82	
CN011	1-506-485-11	PIN, CONNECTOR 6P		D244	8-719-108-01	D100E 1S5153	
CN012	1-506-485-11	PIN, CONNECTOR 6P		IC			
CN013	1-506-470-11	PIN, CONNECTOR 5P		IC001	8-759-603-27	IC NJM501FP	
CN014	*1-564-003-21	PIN, CONNECTOR 4P		IC002	8-759-701-97	IC NJM562M	
CN015	1-506-485-11	PIN, CONNECTOR 6P		IC003	8-759-603-27	IC NJM501FP	
CN016	1-506-485-11	PIN, CONNECTOR 6P		IC004	8-759-700-43	IC NJM558M	
D100E				IC005	8-759-700-43	IC NJM558M	
D001	8-719-101-23	D100E 1S5123		IC007	8-759-700-43	IC NJM558M	
D101	8-719-101-23	D100E 1S5123		IC008	8-759-603-27	IC NJM501FP	
D201	8-719-100-03	D100E 1S2835		IC101	8-759-603-27	IC NJM501FP	
D202	8-719-100-05	D100E 1S2837		IC102	8-759-701-97	IC NJM562M	
				IC103	8-759-603-27	IC NJM501FP	

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
IC104	8-759-700-43	IC NJM4558M		Q210	8-729-901-01	TRANSISTOR DTC144EX	
IC105	8-759-700-43	IC NJM4558M		Q211	8-729-901-06	TRANSISTOR DTA144EX	
IC107	8-759-700-43	IC NJM4558M		Q212	8-729-901-06	TRANSISTOR DTA144EX	
IC108	8-759-603-27	IC ME201FP		Q213	8-729-901-06	TRANSISTOR DTA144EX	
IC201	8-759-200-81	IC TC4053BF		Q214	8-729-901-01	TRANSISTOR DTC144EX	
IC202	8-759-201-00	IC TC4052BF		Q215	8-729-901-01	TRANSISTOR DTC144EX	
IC204	8-759-200-81	IC TC4053BF		Q216	8-729-901-01	TRANSISTOR DTC144EX	
IC205	8-759-700-43	IC NJM4558M		Q217	8-729-901-06	TRANSISTOR DTA144EX	
IC206	8-759-200-81	IC TC4053BF		Q218	8-729-901-01	TRANSISTOR DTC144EX	
IC207	8-759-603-27	IC ME201FP		Q219	8-729-901-01	TRANSISTOR DTC144EX	
IC208	8-759-700-43	IC NJM4558M		Q220	8-729-901-01	TRANSISTOR DTC144EX	
IC209	8-759-603-27	IC ME201FP		Q221	8-729-901-06	TRANSISTOR DTA144EX	
TRANSISTOR				Q222	8-729-901-06	TRANSISTOR DTA144EX	
Q001	8-729-100-66	TRANSISTOR 2SC1623		Q223	8-729-901-06	TRANSISTOR DTA144EX	
Q002	8-729-202-38	TRANSISTOR 2SC3326N		Q224	8-729-901-06	TRANSISTOR DTA144EX	
Q003	8-729-202-38	TRANSISTOR 2SC3326N		Q225	8-729-901-01	TRANSISTOR DTC144EX	
Q004	8-729-202-38	TRANSISTOR 2SC3326N		Q226	8-729-901-01	TRANSISTOR DTC144EX	
Q005	8-729-202-38	TRANSISTOR 2SC3326N		Q228	8-729-901-01	TRANSISTOR DTC144EX	
Q006	8-729-202-38	TRANSISTOR 2SC3326N		Q229	8-729-901-06	TRANSISTOR DTA144EX	
Q007	8-729-202-38	TRANSISTOR 2SC3326N		Q230	8-729-901-06	TRANSISTOR DTA144EX	
Q008	8-729-202-38	TRANSISTOR 2SC3326N		Q231	8-729-901-06	TRANSISTOR DTA144EX	
Q009	8-729-202-38	TRANSISTOR 2SC3326N		Q232	8-729-901-06	TRANSISTOR DTA144EX	
Q010	8-729-202-38	TRANSISTOR 2SC3326N		Q233	8-729-901-01	TRANSISTOR DTC144EX	
Q011	8-729-202-38	TRANSISTOR 2SC3326N		Q234	8-729-202-38	TRANSISTOR 2SC3326N	
Q012	8-729-202-38	TRANSISTOR 2SC3326N		Q235	8-729-100-66	TRANSISTOR 2SC1623	
Q013	8-729-202-38	TRANSISTOR 2SC3326N		Q236	8-729-901-01	TRANSISTOR DTC144EX	
Q016	8-729-202-38	TRANSISTOR 2SC3326N		Q238	8-729-901-06	TRANSISTOR DTA144EX	
Q018	8-729-202-38	TRANSISTOR 2SC3326N		Q239	8-729-100-76	TRANSISTOR 2SA812	
Q021	8-729-202-38	TRANSISTOR 2SC3326N		Q240	8-729-901-01	TRANSISTOR DTC144EX	
Q101	8-729-100-66	TRANSISTOR 2SC1623		Q243	8-729-901-01	TRANSISTOR DTC144EX	
Q102	8-729-202-38	TRANSISTOR 2SC3326N		Q244	8-729-901-06	TRANSISTOR DTA144EX	
Q103	8-729-202-38	TRANSISTOR 2SC3326N		Q245	8-729-901-06	TRANSISTOR DTA144EX	
Q104	8-729-202-38	TRANSISTOR 2SC3326N		Q246	8-729-901-06	TRANSISTOR DTA144EX	
Q105	8-729-202-38	TRANSISTOR 2SC3326N		Q247	8-729-901-06	TRANSISTOR DTA144EX	
Q106	8-729-202-38	TRANSISTOR 2SC3326N		Q248	8-729-901-06	TRANSISTOR DTA144EX	
Q107	8-729-202-38	TRANSISTOR 2SC3326N		Q249	8-729-901-01	TRANSISTOR DTC144EX	
Q109	8-729-202-38	TRANSISTOR 2SC3326N		Q252	8-729-901-06	TRANSISTOR DTA144EX	
Q110	8-729-202-38	TRANSISTOR 2SC3326N		Q253	8-729-202-38	TRANSISTOR 2SC3326N	
Q111	8-729-202-38	TRANSISTOR 2SC3326N		Q254	8-729-901-06	TRANSISTOR DTA144EX	
Q112	8-729-202-38	TRANSISTOR 2SC3326N		Q255	8-729-901-06	TRANSISTOR DTA144EX	
Q113	8-729-202-38	TRANSISTOR 2SC3326N		Q262	8-729-901-01	TRANSISTOR DTC144EX	
Q116	8-729-202-38	TRANSISTOR 2SC3326N		Q263	8-729-901-01	TRANSISTOR DTC144EX	
Q118	8-729-202-38	TRANSISTOR 2SC3326N		Q264	8-729-100-66	TRANSISTOR 2SC1623	
Q121	8-729-202-38	TRANSISTOR 2SC3326N		Q265	8-729-202-38	TRANSISTOR 2SC3326N	
Q201	8-729-901-06	TRANSISTOR DTA144EX		RESISTOR			
Q202	8-729-901-01	TRANSISTOR DTC144EX		R001	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
Q204	8-729-901-01	TRANSISTOR DTC144EX		R002	1-216-084-00	METAL GLAZE 30K 5% 1/10W	
Q205	8-729-901-06	TRANSISTOR DTA144EX		R003	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
Q206	8-729-901-06	TRANSISTOR DTA144EX		R005	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
Q207	8-729-901-06	TRANSISTOR DTA144EX		R006	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
Q208	8-729-901-01	TRANSISTOR DTC144EX		R007	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
Q209	8-729-901-06	TRANSISTOR DTA144EX		R008	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R009	1-216-073-00	METAL GLAZE	10K 5%	1/10W	R064	1-216-085-00	METAL GLAZE 33K 5% 1/10W
R010	1-216-045-00	METAL GLAZE	680 5%	1/10W	R065	1-216-083-00	METAL GLAZE 27K 5% 1/10W
R011	1-216-091-00	METAL GLAZE	5.6K 5%	1/10W	R066	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R012	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R067	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R013	1-216-061-00	METAL GLAZE	3.3K 5%	1/10W	R068	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R014	1-216-059-00	METAL GLAZE	2.7K 5%	1/10W	R069	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W
R015	1-216-089-00	METAL GLAZE	6.8K 5%	1/10W	R070	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R016	1-216-059-00	METAL GLAZE	2.7K 5%	1/10W	R071	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R017	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R072	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W
R018	1-216-059-00	METAL GLAZE	2.7K 5%	1/10W	R073	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R019	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R074	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W
R021	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R075	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R022	1-216-071-00	METAL GLAZE	8.2K 5%	1/10W	R076	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R023	1-216-077-00	METAL GLAZE	15K 5%	1/10W	R077	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R024	1-216-067-00	METAL GLAZE	5.6K 5%	1/10W	R078	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W
R025	1-216-121-00	METAL GLAZE	1M 5%	1/10W	R079	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R026	1-216-067-00	METAL GLAZE	5.6K 5%	1/10W	R080	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R027	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R081	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R028	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R082	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R029	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R083	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R031	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R084	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R032	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R085	1-216-083-00	METAL GLAZE 27K 5% 1/10W
R033	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R086	1-216-295-00	METAL GLAZE 0 5% 1/10W
R034	1-216-051-00	METAL GLAZE	1.2K 5%	1/10W	R090	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R035	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R091	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R036	1-216-069-00	METAL GLAZE	6.8K 5%	1/10W	R094	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R037	1-216-049-00	METAL GLAZE	1K 5%	1/10W	R096	1-216-295-00	METAL GLAZE 0 5% 1/10W
R038	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R097	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R039	1-216-073-00	METAL GLAZE	10K 5%	1/10W	R098	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W
R040	1-216-113-00	METAL GLAZE	470K 5%	1/10W	R099	1-216-295-00	METAL GLAZE 0 5% 1/10W
R041	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R101	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R042	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R102	1-216-084-00	METAL GLAZE 30K 5% 1/10W
R043	1-216-053-00	METAL GLAZE	1.5K 5%	1/10W	R103	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R044	1-216-295-00	METAL GLAZE	0 5%	1/10W	R105	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R045	1-216-082-00	METAL GLAZE	24K 5%	1/10W	R106	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R046	1-216-078-00	METAL GLAZE	16K 5%	1/10W	R107	1-216-091-00	METAL GLAZE 56K 5% 1/10W
R047	1-216-083-00	METAL GLAZE	27K 5%	1/10W	R108	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R048	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R109	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R049	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R110	1-216-045-00	METAL GLAZE 680 5% 1/10W
R050	1-216-053-00	METAL GLAZE	1.5K 5%	1/10W	R111	1-216-091-00	METAL GLAZE 56K 5% 1/10W
R051	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R112	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R052	1-216-295-00	METAL GLAZE	0 5%	1/10W	R114	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W
R053	1-216-083-00	METAL GLAZE	27K 5%	1/10W	R115	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W
R054	1-216-078-00	METAL GLAZE	16K 5%	1/10W	R116	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W
R055	1-216-082-00	METAL GLAZE	24K 5%	1/10W	R117	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R056	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R118	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W
R057	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R119	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R058	1-216-059-00	METAL GLAZE	2.7K 5%	1/10W	R121	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R059	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R122	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W
R060	1-216-049-00	METAL GLAZE	1K 5%	1/10W	R123	1-216-077-00	METAL GLAZE 15K 5% 1/10W
R061	1-216-073-00	METAL GLAZE	10K 5%	1/10W	R124	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W
R062	1-216-089-00	METAL GLAZE	47K 5%	1/10W	R125	1-216-121-00	METAL GLAZE 1M 5% 1/10W
R063	1-216-065-00	METAL GLAZE	4.7K 5%	1/10W	R126	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R127	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R183	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R128	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R184	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R129	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R185	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R131	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R186	1-216-295-00	METAL GLAZE	0 5% 1/10W
R132	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R190	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R133	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R191	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R134	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W	R194	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R135	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R196	1-216-295-00	METAL GLAZE	0 5% 1/10W
R136	1-216-065-00	METAL GLAZE	6.8K 5% 1/10W	R197	1-216-113-00	METAL GLAZE	470K 5% 1/10W
R137	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R198	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R138	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R199	1-216-295-00	METAL GLAZE	0 5% 1/10W
R139	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R202	1-216-041-00	METAL GLAZE	470 5% 1/10W
R140	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R204	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R141	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R205	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R142	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R206	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R143	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R210	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R144	1-216-295-00	METAL GLAZE	0 5% 1/10W	R211	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R145	1-216-082-00	METAL GLAZE	24K 5% 1/10W	R212	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R146	1-216-078-00	METAL GLAZE	16K 5% 1/10W	R213	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R147	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R214	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R148	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R215	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R149	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R216	1-216-295-00	METAL GLAZE	0 5% 1/10W
R150	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R217	1-216-091-00	METAL GLAZE	59K 5% 1/10W
R151	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R218	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R152	1-216-295-00	METAL GLAZE	0 5% 1/10W	R219	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R153	1-216-063-00	METAL GLAZE	27K 5% 1/10W	R220	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R154	1-216-078-00	METAL GLAZE	16K 5% 1/10W	R221	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R155	1-216-082-00	METAL GLAZE	24K 5% 1/10W	R222	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R157	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R223	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R158	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R224	1-216-295-00	METAL GLAZE	0 5% 1/10W
R159	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R225	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R160	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R226	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R161	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R227	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R162	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R228	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R164	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R229	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R165	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R230	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R166	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R231	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R167	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R232	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R168	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R233	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R169	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W	R234	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R170	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R237	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R171	1-216-093-00	METAL GLAZE	68K 5% 1/10W	R238	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R172	1-216-058-00	METAL GLAZE	2.4K 5% 1/10W	R239	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R173	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R241	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R174	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R242	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R175	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R243	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R176	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R244	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R177	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R245	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R178	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R246	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R179	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R247	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R180	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R249	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R181	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R250	1-216-063-00	METAL GLAZE	3.9K 5% 1/10W
R182	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R251	1-216-089-00	METAL GLAZE	47K 5% 1/10W

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R252	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R312	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W
R253	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R313	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R254	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R314	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R255	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R315	1-216-095-00	METAL GLAZE	0 5% 1/10W
R256	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R316	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R257	1-216-295-00	METAL GLAZE	0 5% 1/10W	R317	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R260	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R318	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R261	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R319	1-216-295-00	METAL GLAZE	0 5% 1/10W
R262	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R320	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R263	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R323	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R264	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R324	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R265	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R325	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R266	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R326	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R267	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R327	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R268	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R328	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R270	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R329	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R271	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R330	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R272	1-216-295-00	METAL GLAZE	0 5% 1/10W	R331	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R273	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R332	1-216-054-00	METAL GLAZE	1.6K 5% 1/10W
R274	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R333	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R276	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R334	1-216-095-00	METAL GLAZE	82K 5% 1/10W
R277	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R335	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R278	1-216-059-00	METAL GLAZE	6.8K 5% 1/10W	R336	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R279	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R337	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R280	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R338	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R281	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W	R339	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R282	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R340	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R284	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R341	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R285	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R342	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R287	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R343	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R288	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R344	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R288	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R345	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R289	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R346	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R290	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R347	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R291	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R348	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R293	1-216-295-00	METAL GLAZE	0 5% 1/10W	R349	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R294	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R350	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R295	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R351	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R296	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R352	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R297	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R353	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R298	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R401	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R299	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R402	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R300	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R403	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R301	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R404	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R302	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R405	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R303	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R501	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R304	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R502	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R305	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R503	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R306	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R504	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R307	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R505	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R309	1-216-295-00	METAL GLAZE	0 5% 1/10W	R601	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R310	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R602	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R311	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R603	1-216-073-00	METAL GLAZE	10K 5% 1/10W

When indicating parts by reference number, please include the board name.

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RS-28

MD-18P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R604	1-216-089-00	METAL GLAZE 47K 5% 1/10W		*A-7061-500-A	MD-18 (P) BOARD, COMPLETE (Ref. No. 4,000 Series)		
R605	1-216-089-00	METAL GLAZE 47K 5% 1/10W					

*A-7061-044-A	RS-28	BOARD, COMPLETE (Ref. No. 4,000 Series)		1-625-649-11	FP-84 FLEXIBLE BOARD		
*1-569-762-11		WIRE, FLAT TYPE 22P		1-625-650-11	FP-122 FLEXIBLE BOARD		
3-712-410-01		HOLDER, RS					
		CONNECTOR					
CN801	*1-564-012-11	PIN, CONNECTOR 2P					
CN802	*1-564-012-31	PIN, CONNECTOR 2P					
CN804	*1-563-494-11	CONNECTOR, F.P.C GP					
CN305	*1-565-211-11	CONNECTOR, FPC (ZIP) 22P					
		DIODE					
D320	8-719-101-23	DIODE 1SS123					
D321	8-719-101-23	DIODE 1SS123					
		IC					
IC301	8-759-908-81	IC MB3763PF					
IC302	8-759-908-81	IC MB3763PF					
		TRANSISTOR					
PH301	8-719-939-11	GP2509-B					
PH302	8-719-939-11	GP2509-B					
PH303	8-719-939-11	GP2509-B					
		TRANSISTOR					
Q301	8-729-199-92	TRANSISTOR 2SD999					
Q302	8-729-901-05	TRANSISTOR DTA124EX					
Q303	8-729-900-53	TRANSISTOR DTC114EX					
Q304	8-729-901-05	TRANSISTOR DTA124EX					
Q305	8-729-901-01	TRANSISTOR DTC114EX					
Q306	8-729-901-01	TRANSISTOR DTC114EX					
Q307	8-729-901-01	TRANSISTOR DTC114EX					
		RESISTOR					
R302	1-216-174-00	METAL GLAZE 100 5% 1/8W					
R303	1-216-180-00	METAL GLAZE 180 5% 1/8W					
R304	1-216-089-00	METAL GLAZE 47K 5% 1/10W					
R305	1-216-089-00	METAL GLAZE 47K 5% 1/10W					
R306	1-216-089-00	METAL GLAZE 47K 5% 1/10W					
R307	1-216-073-00	METAL GLAZE 10K 5% 1/10W					
R308	1-216-073-00	METAL GLAZE 10K 5% 1/10W					
R309	1-216-073-00	METAL GLAZE 10K 5% 1/10W					
R320	1-216-041-00	METAL GLAZE 470 5% 1/10W					
R321	1-216-073-00	METAL GLAZE 10K 5% 1/10W					

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
CN805	*1-564-003-21	PIN, CONNECTOR 4P		Q821	8-729-100-67	TRANSISTOR 2SC1623-L7	
CN806	*1-564-003-21	PIN, CONNECTOR 4P		Q880	8-729-100-67	TRANSISTOR 2SC1623-L7	
CN807	1-566-527-11	CONNECTOR, FPC (ZIF) 11P		Q901	8-729-903-88	TRANSISTOR 2SB1188-R	
CN808	1-566-531-11	CONNECTOR, FPC (ZIF) 15P		Q902	8-729-903-88	TRANSISTOR 2SB1188-R	
CN809	1-566-945-11	CONNECTOR, BOARD TO BOARD 18P		Q903	8-729-903-88	TRANSISTOR 2SB1188-R	
CN810	1-566-945-11	CONNECTOR, BOARD TO BOARD 22P		Q904	8-729-901-06	TRANSISTOR DTA144EX	
CN811	*1-566-367-11	CONNECTOR, HINGE (RECEPTACLE)		Q905	8-729-901-06	TRANSISTOR DTA144EX	
CN812	1-566-942-11	CONNECTOR, HINGE (RECEPTACLE) 30P		Q906	8-729-901-01	TRANSISTOR DTC144EX	
CN814	*1-566-367-11	CONNECTOR, HINGE (RECEPTACLE)		Q907	8-729-901-01	TRANSISTOR DTC144EX	
<u>DIODE</u>				<u>RESISTOR</u>			
D803	8-719-200-27	DIODE E10052		R806	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
D810	8-719-100-05	DIODE 1S2837		R807	1-216-049-00	METAL GLAZE 1K 5%	1/10W
D811	8-719-200-27	DIODE E10052		R810	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
D901	8-719-100-05	DIODE 1S2837		R811	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
D902	8-719-100-05	DIODE 1S2837		R818	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
D903	8-719-100-05	DIODE 1S2837		R819	1-216-113-00	METAL GLAZE 470K 5%	1/10W
D904	8-719-101-23	DIODE 1S5123		R820	1-216-025-00	METAL GLAZE 100 5%	1/10W
D905	8-719-801-48	DIODE 1S5193		R821	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
<u>IC</u>				R822	1-216-295-00	METAL GLAZE 0 5%	1/10W
IC801	8-759-202-45	IC CX20174		R823	1-216-025-00	METAL GLAZE 100 5%	1/10W
IC802	8-759-802-79	IC LA1615M		R824	1-216-081-00	METAL GLAZE 22K 5%	1/10W
IC804	8-759-701-24	IC NJK3414M		R825	1-216-085-00	METAL GLAZE 33K 5%	1/10W
IC805	8-759-100-93	IC UPC39302		R826	1-216-073-00	METAL GLAZE 10K 5%	1/10W
IC806	8-759-207-00	IC TA7733F		R827	1-216-081-00	METAL GLAZE 22K 5%	1/10W
IC807	8-759-107-68	IC CX20715A		R828	1-216-033-00	METAL GLAZE 220 5%	1/10W
IC901	8-759-207-50	IC TA7745F		R829	1-216-081-00	METAL GLAZE 22K 5%	1/10W
IC902	8-759-100-95	IC UPC32462		R830	1-216-101-00	METAL GLAZE 150K 5%	1/10W
IC903	8-759-925-66	IC BA6303F		R831	1-216-049-00	METAL GLAZE 1K 5%	1/10W
IC904	8-759-201-01	IC TC4065BF		R832	1-216-304-11	METAL GLAZE 3.3 5%	1/10W
<u>IC LINK</u>				R833	1-216-304-11	METAL GLAZE 3.3 5%	1/10W
P5801A	1-532-595-00	LINK, IC 0-8A		R834	1-216-304-11	METAL GLAZE 3.3 5%	1/10W
<u>TRANSISTOR</u>				R840	1-216-107-00	METAL GLAZE 270K 5%	1/10W
Q801	8-729-903-97	TRANSISTOR FM51FE		R841	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q802	8-729-903-92	TRANSISTOR FM2		R842	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q806	8-729-111-14	TRANSISTOR 2SA1385-Z-L		R843	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q807	8-729-901-05	TRANSISTOR DTA144EX		R844	1-216-107-00	METAL GLAZE 270K 5%	1/10W
Q808	8-729-100-76	TRANSISTOR 2SA812		R845	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q809	8-729-105-19	TRANSISTOR 2SC3518		R846	1-216-107-00	METAL GLAZE 270K 5%	1/10W
Q810	8-729-105-40	TRANSISTOR 2SB1114-ZK		R847	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q811	8-729-106-40	TRANSISTOR 2SB1114-ZK		R848	1-216-107-00	METAL GLAZE 270K 5%	1/10W
Q812	8-729-111-14	TRANSISTOR 2SA1385-Z-L		R849	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q813	8-729-100-67	TRANSISTOR 2SC1623-L7		R851	1-216-055-00	METAL GLAZE 1.5K 5%	1/10W
Q820	8-729-105-19	TRANSISTOR 2SC3518		R852	1-216-081-00	METAL GLAZE 22K 5%	1/10W
				R850	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
				R861	1-216-055-00	METAL GLAZE 1.5K 5%	1/10W
				R864	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R870	1-216-113-00	METAL GLAZE 470K 5%	1/10W
				R887	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R888	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R889	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R896	1-216-073-00	METAL GLAZE 10K 5%	1/10W
				R897	1-216-039-00	METAL GLAZE 390 5%	1/10W

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

MD-18P

HK-3

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R901	1-216-035-00	METAL GLAZE	270 5% 1/10W	C106	1-126-205-11	ELECT	47MF 20% 6.3V
R902	1-216-035-00	METAL GLAZE	270 5% 1/10W	C107	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
R903	1-216-035-00	METAL GLAZE	270 5% 1/10W	C108	1-163-275-91	CERAMIC CHIP 0.001MF	5% 50V
R904	1-216-049-00	METAL GLAZE	1K 5% 1/10W	C109	1-163-035-00	CERAMIC CHIP 0.047MF	5% 50V
R905	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C110	1-163-120-00	CERAMIC CHIP 130PF	5% 50V
R906	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	C111	1-163-035-00	CERAMIC CHIP 0.047MF	50V
R907	1-216-059-00	METAL GLAZE	6.8K 5% 1/10W	C112	1-163-035-00	CERAMIC CHIP 0.047MF	50V
R908	1-216-027-00	METAL GLAZE	120 5% 1/10W	C113	1-163-035-00	CERAMIC CHIP 0.047MF	50V
R909	1-216-027-00	METAL GLAZE	120 5% 1/10W	C114	1-163-038-00	CERAMIC CHIP 0.1MF	25V
R910	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C115	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
R911	1-216-113-00	METAL GLAZE	470K 5% 1/10W	C116	1-126-209-11	ELECT	100MF 20% 4V
R912	1-216-059-00	METAL GLAZE	6.8K 5% 1/10W	C117	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
R913	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	C118	1-135-150-21	TANTAL. CHIP 3.3MF	10% 6.3V
R916	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C119	1-163-038-00	CERAMIC CHIP 0.1MF	25V
R917	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C120	1-163-094-00	CERAMIC CHIP 11PF	5% 50V
R918	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C121	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
R919	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C122	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
R920	1-216-077-00	METAL GLAZE	15K 5% 1/10W	C123	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
R921	1-216-083-00	METAL GLAZE	27K 5% 1/10W	C124	1-135-072-21	TANTAL. CHIP 0.22MF	10% 35V
R922	1-216-085-00	METAL GLAZE	33K 5% 1/10W	C125	1-163-122-00	CERAMIC CHIP 160PF	5% 50V
R923	1-216-748-11	METAL GLAZE	39K 5% 1/10W	C126	1-163-122-00	CERAMIC CHIP 160PF	5% 50V
R924	1-216-089-00	METAL GLAZE	47K 5% 1/10W	C127	1-163-102-00	CERAMIC CHIP 22PF	5% 50V
R925	1-216-089-00	METAL GLAZE	47K 5% 1/10W	C128	1-163-035-00	CERAMIC CHIP 0.047MF	50V
R926	1-216-111-00	METAL GLAZE	390K 5% 1/10W	C129	1-163-035-00	CERAMIC CHIP 0.047MF	50V
R927	1-216-110-00	METAL GLAZE	360K 5% 1/10W	C130	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
R928	1-216-073-00	METAL GLAZE	10K 5% 1/10W	C131	1-163-035-00	CERAMIC CHIP 0.047MF	50V
R929	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	C132	1-163-085-00	CERAMIC CHIP 2PF	0.25PF 50V
R950	1-216-295-00	METAL GLAZE	0 5% 1/10W	C133	1-163-092-00	CERAMIC CHIP 9PF	0.25PF 50V
VARIABLE RESISTOR				C134	1-163-038-00	CERAMIC CHIP 0.1MF	25V
RY901	1-230-529-11	RES, ADJ, METAL GLAZE 470K		C135	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
THERMISTOR				C136	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
THP801	1-806-886-11	THERMISTOR (POSITIVE)		C137	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CONNECTOR				C138	1-135-155-21	TANTAL. CHIP 4.7MF	20% 10V
WB01	1-562-880-11	CONNECTOR, CARD EDGE 15P		C139	1-135-155-21	TANTAL. CHIP 4.7MF	20% 10V
W901	1-562-880-11	CONNECTOR, CARD EDGE 15P		C140	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
*****				C141	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
*A-7061-501-A HK-3 BOARD, COMPLETE (Ref.No. 2,000				C142	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
***** Series)				C143	1-163-021-00	CERAMIC CHIP 0.01MF	50V
3-531-576-01	RIVET			C144	1-126-205-11	ELECT	47MF 20% 6.3V
*3-724-107-01	RETAINER, PC BOARD			C145	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
CAPACITOR				C146	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C101	1-163-120-00	CERAMIC CHIP 130PF	5% 50V	C147	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C102	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C148	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C103	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C149	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C104	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C150	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C105	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C151	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C152	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
				C153	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C154	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
				C155	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
				C157	1-163-038-00	CERAMIC CHIP 0.1MF	25V
				C158	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
				C159	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V

When indicating parts by reference number, please include the board name.

Sf.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark			
C200	1-126-206-11	ELECT	100MF	20%	6.3V	C311	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C201	1-163-038-00	CERAMIC CHIP	0.1MF		25V	C312	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C202	1-163-035-00	CERAMIC CHIP	0.047MF		50V	C313	1-163-091-00	CERAMIC CHIP 89F	0.25PF	50V
C203	1-163-035-00	CERAMIC CHIP	0.047MF		50V	C314	1-163-097-00	CERAMIC CHIP 159F	5%	50V
C204	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	C315	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C205	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	C316	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C206	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	C317	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C207	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	C318	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C208	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V	C319	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C209	1-163-035-00	CERAMIC CHIP	0.047MF		50V	C320	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C210	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	C321	1-163-088-00	CERAMIC CHIP 59F	0.25PF	50V
C211	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V	C322	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C212	1-163-021-00	CERAMIC CHIP	0.01MF		50V	C323	1-135-070-00	TANTAL. CHIP 0.1MF	10%	35V
C213	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	C324	1-135-073-00	TANTAL. CHIP 0.33MF	10%	35V
C214	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	C325	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C215	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	C326	1-163-275-91	CERAMIC CHIP 0.001MF	5%	50V
C216	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	C327	1-163-108-00	CERAMIC CHIP 43PF	5%	50V
C217	1-163-116-00	CERAMIC CHIP	82PF	5%	50V	C328	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C218	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	C329	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C219	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	C330	1-135-100-21	TANTAL. CHIP 6.8MF	10%	6.3V
C220	1-126-206-11	ELECT	47MF	20%	4V	C331	1-135-155-21	TANTAL. CHIP 4.7MF	20%	10V
C221	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	C332	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C222	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	C333	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C223	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	C334	1-163-121-00	CERAMIC CHIP 150PF	5%	50V
C224	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	C335	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C225	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V	C336	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C226	1-135-099-85	TANTAL. CHIP	2.2MF	10%	6.3V	C337	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C227	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	C338	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C228	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	C339	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C229	1-135-151-21	TANTAL. CHIP	4.7MF	20%	4V	C340	1-135-072-21	TANTAL. CHIP 0.22MF	10%	35V
C230	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	C341	1-135-099-85	TANTAL. CHIP 2.2MF	10%	6.3V
C231	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	C342	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C232	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	C343	1-135-099-85	TANTAL. CHIP 2.2MF	10%	6.3V
C233	1-163-021-00	CERAMIC CHIP	0.01MF		50V	C344	1-135-099-85	TANTAL. CHIP 2.2MF	10%	6.3V
C234	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	C345	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C235	1-135-099-85	TANTAL. CHIP	2.2MF	10%	6.3V	C346	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C236	1-163-035-00	CERAMIC CHIP	0.047MF		50V	C349	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C237	1-124-778-00	ELECT	22MF	20%	6.3V	C350	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C238	1-124-778-00	ELECT	22MF	20%	6.3V	C351	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C239	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	C352	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C240	1-163-035-00	CERAMIC CHIP	0.047MF		50V	C353	1-135-150-21	TANTAL. CHIP 3.3MF	10%	6.3V
C241	1-163-021-00	CERAMIC CHIP	0.01MF		50V	C354	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C242	1-135-157-21	TANTAL. CHIP	10MF	20%	6.3V	C355	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C301	1-135-101-81	TANTAL. CHIP	22MF	20%	6.3V	C356	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C302	1-163-038-00	CERAMIC CHIP	0.1MF		25V	C357	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C303	1-163-035-00	CERAMIC CHIP	0.047MF		50V	C358	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C304	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	C359	1-135-150-21	TANTAL. CHIP 3.3MF	10%	6.3V
C305	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	C360	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C306	1-163-021-00	CERAMIC CHIP	0.01MF		50V	C361	1-135-099-85	TANTAL. CHIP 2.2MF	10%	6.3V
C307	1-163-275-91	CERAMIC CHIP	0.001MF	5%	50V	C362	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C308	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	C363	1-163-275-91	CERAMIC CHIP 0.001MF	5%	50V
C309	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V	C364	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C310	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	C365	1-163-038-00	CERAMIC CHIP 0.1MF		25V

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Ref. No	Part No.	Description	Remark	Ref. No	Part No.	Description	Remark
C366	1-163-118-00	CERAMIC CHIP 110PF	5% 50V	C701	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C367	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C702	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C368	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C703	1-135-101-81	TANTAL. CHIP 22MF	20% 6.3V
C369	1-163-021-00	CERAMIC CHIP 0.01MF	5% 50V	C704	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C370	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C707	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C371	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C708	1-135-151-21	TANTAL. CHIP 4.7MF	20% 4V
C372	1-126-205-11	ELECT 47MF	20% 6.3V	C709	1-135-101-81	TANTAL. CHIP 22MF	20% 6.3V
C373	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C711	1-135-151-21	TANTAL. CHIP 4.7MF	20% 4V
C374	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C712	1-135-158-21	TANTAL. CHIP 15MF	20% 4V
C375	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	C713	1-135-158-21	TANTAL. CHIP 15MF	20% 4V
C376	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	C714	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C377	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C715	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C378	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C716	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
C379	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	C717	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C380	1-163-113-00	CERAMIC CHIP 68PF	5% 50V	C718	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C381	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	C719	1-163-129-00	CERAMIC CHIP 330PF	5% 50V
C382	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	C720	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C383	1-163-109-00	CERAMIC CHIP 330PF	5% 50V	C721	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
C384	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	C722	1-124-778-00	ELECT 22MF	20% 6.3V
C500	1-163-127-00	CERAMIC CHIP 270PF	5% 50V	C723	1-163-092-00	CERAMIC CHIP 9PF	0.25PF 50V
C501	1-163-119-00	CERAMIC CHIP 120PF	5% 50V	C728	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C502	1-163-127-00	CERAMIC CHIP 270PF	5% 50V	C801	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C503	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C802	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C504	1-124-778-00	ELECT 22MF	20% 6.3V	C803	1-124-225-00	ELECT 100MF	20% 6.3V
C505	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C804	1-126-206-11	ELECT 100MF	20% 6.3V
C506	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C805	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C507	1-163-097-00	CERAMIC CHIP 15PF	5% 50V	C806	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V
C508	1-163-107-00	CERAMIC CHIP 39PF	5% 50V	C807	1-135-151-21	TANTAL. CHIP 4.7MF	20% 4V
C509	1-163-107-00	CERAMIC CHIP 39PF	5% 50V	C808	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C510	1-163-111-00	CERAMIC CHIP 56PF	5% 50V	C809	1-126-206-11	ELECT 100MF	20% 6.3V
C511	1-163-275-91	CERAMIC CHIP 0.001MF	5% 50V	C810	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C512	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C811	1-126-206-11	ELECT 100MF	20% 6.3V
C513	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C812	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C514	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C813	1-126-206-11	ELECT 100MF	20% 6.3V
C515	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C814	1-126-206-11	ELECT 100MF	20% 6.3V
C516	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C815	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
C517	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C901	1-124-442-00	ELECT 330MF	20% 6.3V
C518	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C902	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C519	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C903	1-135-101-81	TANTAL. CHIP 22MF	20% 6.3V
C520	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V	C904	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C525	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C905	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C526	1-163-127-00	CERAMIC CHIP 270PF	5% 50V				
C527	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C528	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V				
C529	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C530	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C531	1-163-095-00	CERAMIC CHIP 12PF	5% 50V				
C532	1-163-035-00	CERAMIC CHIP 0.047MF	50V				
C533	1-135-157-21	TANTAL. CHIP 10MF	20% 6.3V				
C534	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C535	1-163-101-00	CERAMIC CHIP 22PF	5% 50V				
C536	1-163-129-00	CERAMIC CHIP 330PF	5% 50V				
C537	1-163-127-00	CERAMIC CHIP 270PF	5% 50V				

CONNECTOR

CN101	1-566-943-11	CONNECTOR, BOARD TO BOARD 18P
CN102	1-566-943-11	CONNECTOR, BOARD TO BOARD 18P
CN103	1-566-943-11	CONNECTOR, BOARD TO BOARD 18P

TRIMMER

CV301	1-141-331-11	CAP, VAR, TRIMMER (CHIP)
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DIODE

D101	8-719-101-23	DIODE 1SS123
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When indicating parts by reference number, please include the board name.

f.No	Part No.	Description
I102	8-719-101-23	DIODE 1SS123
I103	8-719-101-23	DIODE 1SS123
I104	8-719-801-48	DIODE 1SS193
I105	8-719-801-48	DIODE 1SS193
I201	8-719-101-23	DIODE 1SS123
I202	8-719-801-48	DIODE 1SS193
I203	8-719-801-48	DIODE 1SS193
I301	8-719-101-23	DIODE 1SS123
I302	8-719-101-23	DIODE 1SS123
I303	8-719-100-05	DIODE 1SS237
I304	8-719-101-23	DIODE 1SS123
I501	8-719-101-23	DIODE 1SS123
I601	8-719-801-48	DIODE 1SS193
I901	8-719-801-48	DIODE 1SS193
I902	8-719-801-48	DIODE 1SS193

DELAY LINE

XL201	1-415-517-11	DELAY LINE, DUAL TM-2H
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IC

IC101	8-759-932-15	IC CX20030
IC102	8-759-925-60	IC BA401
IC103	8-759-009-07	IC MC14063BF
IC201	8-752-003-10	IC CX20031
IC301	8-752-003-23	IC CX20032
IC302	8-759-924-94	IC CX22021
IC303	8-759-914-55	IC CX23054
IC304	8-759-202-67	IC CX20117
IC305	8-759-710-09	IC NJM2233AM
IC801	8-741-150-50	IC SN1505
IC901	8-759-204-96	IC TC74NCDAF

COIL

L101	1-408-789-21	INDUCTOR CHIP 100UH
L102	1-408-795-21	INDUCTOR CHIP 390UH
L103	1-408-789-21	INDUCTOR CHIP 100UH
L104	1-407-169-XX	INDUCTOR 100UH
L201	1-408-974-21	INDUCTOR 22UH
L202	1-408-795-21	INDUCTOR CHIP 330UH
L203	1-408-781-00	INDUCTOR CHIP 22UH
L204	1-408-785-21	INDUCTOR CHIP 47UH
L205	1-408-788-21	INDUCTOR CHIP 82UH
L206	1-408-785-21	INDUCTOR CHIP 47UH
L207	1-408-787-00	INDUCTOR CHIP 68UH
L208	1-408-787-00	INDUCTOR CHIP 68UH
L209	1-408-765-21	INDUCTOR CHIP 1UH
L210	1-408-765-21	INDUCTOR CHIP 1UH
L211	1-408-777-00	INDUCTOR CHIP 10UH
L212	1-408-776-00	INDUCTOR CHIP 8.2UH
L301	1-407-169-XX	INDUCTOR 100UH
L302	1-408-792-00	INDUCTOR CHIP 180UH
L303	1-408-788-21	INDUCTOR CHIP 82UH
L304	1-408-775-41	INDUCTOR CHIP 6.8UH

Remark	Ref.No	Part No.	Description	Remark
	L305	1-408-781-00	INDUCTOR CHIP 22UH	
	L307	1-408-781-00	INDUCTOR CHIP 22UH	
	L308	1-408-948-00	INDUCTOR 100UH	
	L309	1-408-789-21	INDUCTOR CHIP 100UH	
	L310	1-408-790-00	INDUCTOR CHIP 120UH	
	L311	1-408-791-00	INDUCTOR CHIP 150UH	
	L501	1-408-795-21	INDUCTOR CHIP 330UH	
	L502	1-408-790-00	INDUCTOR CHIP 120UH	
	L503	1-408-782-11	INDUCTOR CHIP 27UH	
	L504	1-408-408-00	INDUCTOR 8.2UH	
	L505	1-410-167-41	INDUCTOR CHIP 820UH	
	L508	1-408-792-00	INDUCTOR CHIP 180UH	
	L509	1-408-783-00	INDUCTOR CHIP 33UH	
	L510	1-408-783-00	INDUCTOR CHIP 33UH	
	L511	1-408-777-00	INDUCTOR CHIP 10UH	

L701	1-408-780-21	INDUCTOR CHIP 18UH
L702	1-408-786-21	INDUCTOR CHIP 56UH
L703	1-408-788-21	INDUCTOR CHIP 82UH
L704	1-408-786-21	INDUCTOR CHIP 56UH
L705	1-408-777-00	INDUCTOR CHIP 10UH

L706	1-408-791-00	INDUCTOR CHIP 150UH
L707	1-408-790-00	INDUCTOR CHIP 120UH
L801	1-407-169-XX	INDUCTOR 100UH

VARIABLE COIL

LV201	1-404-594-11	COIL, VARIABLE
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TRANSISTOR

Q101	8-729-100-66	TRANSISTOR 2SC1623
Q102	8-729-100-66	TRANSISTOR 2SC1623
Q103	8-729-901-04	TRANSISTOR DTA114EX
Q104	8-729-901-04	TRANSISTOR DTA114EX
Q105	8-729-901-04	TRANSISTOR DTA114EX
Q106	8-729-100-66	TRANSISTOR 2SC1623
Q107	8-729-901-04	TRANSISTOR DTA114EX
Q108	8-729-901-04	TRANSISTOR DTA114EX
Q109	8-729-901-04	TRANSISTOR DTA114EX
Q110	8-729-100-66	TRANSISTOR 2SC1623
Q111	8-729-100-66	TRANSISTOR 2SC1623
Q112	8-729-100-66	TRANSISTOR 2SC1623
Q113	8-729-320-17	TRANSISTOR 2SA1122CD
Q114	8-729-320-17	TRANSISTOR 2SA1122CD
Q115	8-729-320-17	TRANSISTOR 2SA1122CD
Q116	8-729-320-17	TRANSISTOR 2SA1122CD
Q117	8-729-100-66	TRANSISTOR 2SC1623
Q118	8-729-901-01	TRANSISTOR DTC144EX
Q119	8-729-100-66	TRANSISTOR 2SC1623
Q120	8-729-320-17	TRANSISTOR 2SA1122CD
Q121	8-729-901-06	TRANSISTOR DTA144EX
Q122	8-729-901-01	TRANSISTOR DTC144EX
Q123	8-729-100-66	TRANSISTOR 2SC1623
Q124	8-729-901-01	TRANSISTOR DTC144EX
Q201	8-729-100-66	TRANSISTOR 2SC1623

When indicating parts by reference number, please include the board name.

Ref.No	Part.No.	Description	Remark	Ref.No	Part.No.	Description	Remark
Q202	8-729-320-17	TRANSISTOR 2SA1122CD		Q903	8-729-901-01	TRANSISTOR DTC144EK	
Q203	8-729-100-66	TRANSISTOR 2SC1623		Q904	8-729-901-01	TRANSISTOR DTC144EK	
Q204	8-729-100-66	TRANSISTOR 2SC1623		Q905	8-729-901-01	TRANSISTOR DTC144EK	
Q205	8-729-100-66	TRANSISTOR 2SC1623		RESISTOR			
Q206	8-729-320-17	TRANSISTOR 2SA1122CD		R101	1-216-669-11	METAL CHIP 5.6K 0.50% 1/10W	
Q207	8-729-901-01	TRANSISTOR DTC144EK		R102	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
Q208	8-729-901-01	TRANSISTOR DTC144EK		R103	1-216-643-11	METAL CHIP 470 0.50% 1/10W	
Q209	8-729-901-00	TRANSISTOR DTC124EK		R104	1-216-639-11	METAL CHIP 330 0.50% 1/10W	
Q210	8-729-901-01	TRANSISTOR DTC144EK		R105	1-216-641-11	METAL CHIP 390 0.50% 1/10W	
Q211	8-729-901-01	TRANSISTOR DTC144EK		R106	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q212	8-729-901-00	TRANSISTOR DTC124EK		R107	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q301	8-729-100-66	TRANSISTOR 2SC1623		R108	1-216-633-11	METAL CHIP 180 0.50% 1/10W	
Q302	8-729-100-66	TRANSISTOR 2SC1623		R109	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
Q303	8-729-100-66	TRANSISTOR 2SC1623		R110	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
Q304	8-729-100-66	TRANSISTOR 2SC1623		R111	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
Q305	8-729-901-04	TRANSISTOR PMS2		R112	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
Q306	8-729-900-98	TRANSISTOR DTC143TK		R113	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
Q307	8-729-100-66	TRANSISTOR 2SC1623		R114	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
Q308	8-729-100-66	TRANSISTOR 2SC1623		R115	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
Q309	8-729-901-00	TRANSISTOR DTC124EK		R116	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
Q310	8-729-320-17	TRANSISTOR 2SA1122CD		R117	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
Q501	8-729-100-66	TRANSISTOR 2SC1623		R118	1-216-647-11	METAL CHIP 680 0.50% 1/10W	
Q502	8-729-320-17	TRANSISTOR 2SA1122CD		R119	1-216-635-11	METAL CHIP 220 0.50% 1/10W	
Q503	8-729-100-66	TRANSISTOR 2SC1623		R120	1-216-637-11	METAL CHIP 270 0.50% 1/10W	
Q504	8-729-320-17	TRANSISTOR 2SA1122CD		R121	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
Q505	8-729-901-01	TRANSISTOR DTC144EK		R122	1-216-655-11	METAL CHIP 1.5K 0.50% 1/10W	
Q506	8-729-100-66	TRANSISTOR 2SC1623		R123	1-216-295-00	METAL GLAZE 0 1/10W	
Q507	8-729-100-66	TRANSISTOR 2SC1623		R124	1-216-647-11	METAL CHIP 680 0.50% 1/10W	
Q508	8-729-901-05	TRANSISTOR DTA144EK		R125	1-216-647-11	METAL CHIP 680 0.50% 1/10W	
Q509	8-729-601-59	TRANSISTOR 2SC3053TP-XD		R126	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q510	8-729-100-66	TRANSISTOR 2SC1623		R127	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q511	8-729-100-66	TRANSISTOR 2SC1623		R128	1-216-667-11	METAL CHIP 4.7K 0.50% 1/10W	
Q512	8-729-100-66	TRANSISTOR 2SC1623		R129	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
Q513	8-729-901-05	TRANSISTOR DTA144EK		R130	1-216-637-11	METAL CHIP 270 0.50% 1/10W	
Q701	8-729-100-66	TRANSISTOR 2SC1623		R131	1-216-295-00	METAL GLAZE 0 5% 1/10W	
Q702	8-729-100-66	TRANSISTOR 2SC1623		R132	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
Q703	8-729-100-66	TRANSISTOR 2SC1623		R133	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
Q704	8-729-100-66	TRANSISTOR 2SC1623		R134	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
Q705	8-729-100-66	TRANSISTOR 2SC1623		R135	1-216-075-00	METAL GLAZE 12K 5% 1/10W	
Q706	8-729-100-66	TRANSISTOR 2SC1623		R136	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q707	8-729-100-66	TRANSISTOR 2SC1623		R137	1-216-627-11	METAL CHIP 100 0.50% 1/10W	
Q708	8-729-100-66	TRANSISTOR 2SC1623		R138	1-216-657-11	METAL CHIP 1.8K 0.50% 1/10W	
Q709	8-729-100-66	TRANSISTOR 2SC1623		R139	1-216-664-11	METAL CHIP 3.5K 0.50% 1/10W	
Q710	8-729-100-66	TRANSISTOR 2SC1623		R140	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q711	8-729-100-66	TRANSISTOR 2SC1623		R141	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
Q712	8-729-901-05	TRANSISTOR DTA144EK		R142	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
Q713	8-729-100-66	TRANSISTOR 2SC1623		R143	1-216-659-11	METAL CHIP 2.2K 0.50% 1/10W	
Q714	8-729-100-66	TRANSISTOR 2SC1623		R144	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W	
Q715	8-729-100-66	TRANSISTOR 2SC1623		R145	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q716	8-729-100-66	TRANSISTOR 2SC1623		R146	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
Q717	8-729-100-66	TRANSISTOR 2SC1623		R147	1-216-641-11	METAL CHIP 390 0.50% 1/10W	
Q718	8-729-100-66	TRANSISTOR 2SC1623		R148	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
Q719	8-729-100-66	TRANSISTOR 2SC1623					
Q801	8-729-100-66	TRANSISTOR 2SC1623					
Q802	8-729-901-05	TRANSISTOR DTA144EK					
Q901	8-729-104-25	TRANSISTOR ZSR804-WM					
Q902	8-729-901-00	TRANSISTOR DTC124EK					

When indicating parts by reference number, please include the board name.

#F.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R149	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R216	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R150	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R217	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R151	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R218	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R152	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R219	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R153	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R220	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W
R154	1-216-691-11	METAL CHIP	47K 0.50% 1/10W	R221	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R155	1-216-693-11	METAL CHIP	56K 0.50% 1/10W	R222	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R156	1-216-643-11	METAL CHIP	470 0.50% 1/10W	R223	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R157	1-216-683-11	METAL CHIP	22K 0.50% 1/10W	R224	1-216-649-11	METAL CHIP	820 0.50% 1/10W
R158	1-216-643-11	METAL CHIP	470 0.50% 1/10W	R225	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R159	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W	R226	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R160	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W	R227	1-216-065-00	METAL GLAZE	4.7K 1/10W
R161	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W	R228	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R162	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R229	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R163	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R230	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R164	1-216-599-11	METAL CHIP	100K 0.50% 1/10W	R231	1-216-647-11	METAL CHIP	680 0.50% 1/10W
R165	1-216-599-11	METAL CHIP	100K 0.50% 1/10W	R232	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R166	1-216-679-11	METAL CHIP	15K 0.50% 1/10W	R233	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R167	1-216-649-11	METAL CHIP	820 0.50% 1/10W	R234	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R168	1-216-649-11	METAL CHIP	820 0.50% 1/10W	R235	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R170	1-216-637-11	METAL CHIP	270 0.50% 1/10W	R236	1-216-627-11	METAL CHIP	100 0.50% 1/10W
R171	1-216-639-11	METAL CHIP	330 0.50% 1/10W	R237	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R172	1-216-645-11	METAL CHIP	560 0.50% 1/10W	R238	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R173	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W	R239	1-216-687-11	METAL CHIP	33K 0.50% 1/10W
R174	1-249-419-11	CARBON	1K 5% 1/4W	R240	1-216-683-11	METAL CHIP	22K 0.50% 1/10W
R175	1-216-696-11	METAL CHIP	68K 0.50% 1/10W	R241	1-216-679-11	METAL CHIP	19K 0.50% 1/10W
R177	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R242	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W
R178	1-216-109-00	METAL GLAZE	330K 5% 1/10W	R243	1-216-641-11	METAL CHIP	390 0.50% 1/10W
R180	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R244	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R181	1-216-076-00	METAL GLAZE	12K 5% 1/10W	R245	1-216-117-00	METAL GLAZE	680K 5% 1/10W
R182	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R246	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R183	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R247	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R184	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R248	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R185	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R249	1-216-629-11	METAL CHIP	120 0.50% 1/10W
R186	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R250	1-216-627-11	METAL CHIP	100 0.50% 1/10W
R189	1-216-101-00	METAL GLAZE	150K 5% 1/10W	R251	1-216-611-11	METAL CHIP	22 0.50% 1/10W
R190	1-216-647-11	METAL CHIP	680 0.50% 1/10W	R252	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R200	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R253	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R201	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R254	1-216-083-00	METAL GLAZE	27K 5% 1/10W
R202	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R255	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R203	1-216-637-11	METAL CHIP	270 0.50% 1/10W	R256	1-216-641-11	METAL CHIP	390 0.50% 1/10W
R204	1-216-013-00	METAL GLAZE	33 5% 1/10W	R257	1-216-629-11	METAL CHIP	120 0.50% 1/10W
R205	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R258	1-216-637-11	METAL CHIP	270 0.50% 1/10W
R206	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R259	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R207	1-216-111-00	METAL GLAZE	390K 5% 1/10W	R301	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R208	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R302	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R209	1-216-696-11	METAL CHIP	68K 0.50% 1/10W	R303	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R210	1-216-643-11	METAL CHIP	470 0.50% 1/10W	R304	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W
R211	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R305	1-216-645-11	METAL CHIP	560 0.50% 1/10W
R212	1-216-643-11	METAL CHIP	470 0.50% 1/10W	R306	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R213	1-216-651-11	METAL CHIP	1K 0.50% 1/10W	R307	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R214	1-216-651-11	METAL CHIP	1K 0.50% 1/10W	R308	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R215	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R309	1-216-081-00	METAL GLAZE	22K 5% 1/10W

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R310	1-216-661-11	METAL CHIP	2.7K 0.50% 1/10W	R364	1-216-661-11	METAL CHIP	2.7K 0.50% 1/10W
R311	1-216-651-11	METAL CHIP	1K 0.50% 1/10W	R365	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R312	1-216-663-11	METAL CHIP	22K 0.50% 1/10W	R366	1-216-695-11	METAL CHIP	58K 0.50% 1/10W
R313	1-216-662-11	METAL CHIP	10K 0.50% 1/10W	R367	1-216-645-11	METAL CHIP	58K 0.50% 1/10W
R314	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W	R368	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R315	1-216-679-11	METAL CHIP	15K 0.50% 1/10W	R369	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R316	1-216-639-11	METAL CHIP	33K 0.50% 1/10W	R370	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R317	1-216-679-11	METAL CHIP	15K 0.50% 1/10W	R371	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R318	1-216-651-11	METAL CHIP	1K 0.50% 1/10W	R372	1-216-643-11	METAL CHIP	47K 0.50% 1/10W
R319	1-216-651-11	METAL CHIP	1K 0.50% 1/10W	R373	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R320	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W	R374	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R321	1-216-103-00	METAL GLAZE	180K 5% 1/10W	R375	1-216-661-11	METAL CHIP	2.7K 0.50% 1/10W
R322	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R376	1-216-121-00	METAL GLAZE	1M 5% 1/10W
R323	1-216-105-00	METAL GLAZE	220K 5% 1/10W	R377	1-216-641-11	METAL CHIP	39K 0.50% 1/10W
R324	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R378	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R325	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R379	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W
R326	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R380	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R327	1-216-599-11	METAL CHIP	100K 0.50% 1/10W	R382	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R328	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R383	1-216-635-11	METAL CHIP	22K 0.50% 1/10W
R329	1-216-599-11	METAL CHIP	2.2K 0.50% 1/10W	R384	1-216-641-11	METAL CHIP	39K 0.50% 1/10W
R330	1-216-671-11	METAL CHIP	6.8K 0.50% 1/10W	R385	1-216-635-11	METAL CHIP	22K 0.50% 1/10W
R331	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R386	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R332	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R387	1-216-665-11	METAL CHIP	3.9K 0.50% 1/10W
R333	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R388	1-216-661-11	METAL CHIP	2.7K 0.50% 1/10W
R334	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R500	1-216-661-11	METAL CHIP	2.7K 0.50% 1/10W
R335	1-216-295-00	METAL GLAZE	0 5% 1/10W	R501	1-216-631-11	METAL CHIP	15K 0.50% 1/10W
R336	1-216-649-11	METAL CHIP	82K 0.50% 1/10W	R502	1-216-649-11	METAL CHIP	82K 0.50% 1/10W
R338	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R504	1-216-675-11	METAL CHIP	10K 0.50% 1/10W
R339	1-216-640-11	METAL CHIP	36K 0.50% 1/10W	R505	1-216-645-11	METAL CHIP	56K 0.50% 1/10W
R340	1-216-031-00	METAL GLAZE	38K 5% 1/10W	R506	1-216-645-11	METAL CHIP	56K 0.50% 1/10W
R341	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R507	1-216-641-11	METAL CHIP	39K 0.50% 1/10W
R342	1-216-065-00	METAL GLAZE	47K 5% 1/10W	R508	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R343	1-216-089-00	METAL GLAZE	4.7K 5% 1/10W	R509	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R344	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R510	1-216-643-11	METAL CHIP	47K 0.50% 1/10W
R345	1-216-647-11	METAL CHIP	68K 0.50% 1/10W	R511	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R346	1-216-641-11	METAL CHIP	39K 0.50% 1/10W	R512	1-216-643-11	METAL CHIP	47K 0.50% 1/10W
R347	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R513	1-216-643-11	METAL CHIP	47K 0.50% 1/10W
R348	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R514	1-216-643-11	METAL CHIP	47K 0.50% 1/10W
R349	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R515	1-216-641-11	METAL CHIP	39K 0.50% 1/10W
R350	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R516	1-216-637-11	METAL CHIP	27K 0.50% 1/10W
R351	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R517	1-216-659-11	METAL CHIP	2.2K 0.50% 1/10W
R352	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R518	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R353	1-216-655-11	METAL CHIP	1.5K 0.50% 1/10W	R519	1-216-643-11	METAL CHIP	47K 0.50% 1/10W
R354	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W	R520	1-216-653-11	METAL CHIP	1.2K 0.50% 1/10W
R355	1-216-665-11	METAL CHIP	3.9K 0.50% 1/10W	R521	1-216-674-11	METAL CHIP	9.1K 0.50% 1/10W
R356	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R522	1-216-649-11	METAL CHIP	82K 0.50% 1/10W
R357	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R523	1-216-647-11	METAL CHIP	68K 0.50% 1/10W
R358	1-216-699-11	METAL CHIP	100K 0.50% 1/10W	R524	1-216-647-11	METAL CHIP	68K 0.50% 1/10W
R359	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W	R525	1-216-651-11	METAL CHIP	1K 0.50% 1/10W
R360	1-216-095-00	METAL GLAZE	82K 5% 1/10W	R526	1-216-637-11	METAL CHIP	27K 0.50% 1/10W
R361	1-216-295-00	METAL GLAZE	0 5% 1/10W	R527	1-216-637-11	METAL CHIP	27K 0.50% 1/10W
R362	1-216-295-00	METAL GLAZE	0 5% 1/10W	R528	1-216-643-11	METAL CHIP	47K 0.50% 1/10W
R363	1-216-679-11	METAL CHIP	15K 0.50% 1/10W	R529	1-216-679-11	METAL CHIP	15K 0.50% 1/10W

When indicating parts by reference number, please include the board name.

HK-3

FR-30P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
RV202	1-230-870-11	RES, ADJ, METAL GLAZE 10K		C305	1-163-021-00	CERAMIC CHIP 0.01MF	50V
RV301	1-230-871-11	RES, ADJ, METAL GLAZE 22K		C401	1-163-021-00	CERAMIC CHIP 0.01MF	50V
RV302	1-230-870-11	RES, ADJ, METAL GLAZE 10K		C402	1-163-038-00	CERAMIC CHIP 0.1MF	25V
RV303	1-230-873-11	RES, ADJ, METAL GLAZE 47K		C403	1-163-117-00	CERAMIC CHIP 100PF	5V
RV304	1-237-576-21	RES, ADJ, METAL GLAZE 220K		C404	1-163-117-00	CERAMIC CHIP 100PF	5V
RV305	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K		C405	1-163-121-00	CERAMIC CHIP 150PF	5V
RV501	1-237-433-21	RES, ADJ, METAL GLAZE 470		C406	1-163-117-00	CERAMIC CHIP 100PF	5V
RV502	1-237-433-21	RES, ADJ, METAL GLAZE 470		C501	1-163-021-00	CERAMIC CHIP 0.01MF	50V
RV701	1-230-865-11	RES, ADJ, METAL GLAZE 2.2K		C504	1-126-157-11	ELECT 10MF	20V
				C507	1-126-157-11	ELECT 10MF	20V
<u>TRANSFORMER</u>				C508	1-163-035-00	CERAMIC CHIP 0.047MF	50V
T301	1-409-396-11	REC C TRAP		C509	1-163-809-11	CERAMIC CHIP 0.047MF	10V
T302	1-235-437-11	BPF, PB C		C510	1-163-809-11	CERAMIC CHIP 0.047MF	10V
T303	1-409-394-11	TRAP, CHROMA EMPHASIS		C511	1-163-809-11	CERAMIC CHIP 0.047MF	10V
T304	1-235-632-11	BPF		C512	1-163-035-00	CERAMIC CHIP 0.047MF	50V
T305	1-235-633-11	BPF		C513	1-126-157-11	ELECT 10MF	20V
T501	1-409-397-11	TRAP		C514	1-163-021-00	CERAMIC CHIP 0.01MF	50V
T801	1-236-145-11	FILTER, BAND PASS		C515	1-163-035-00	CERAMIC CHIP 0.047MF	50V
<u>THERMISTOR</u>				C601	1-135-169-21	TANTAL CHIP 10MF	20V
TH101	1-800-954-11	THERMISTOR 5-3K		C602	1-163-038-00	CERAMIC CHIP 0.1MF	25V
<u>CRYSTAL</u>				<u>CONNECTOR</u>			
X201	1-567-347-11	OSCILLATOR, CERAMIC (13.3MHz)		CN101	1-562-629-11	SOCKET, CONNECTOR 19P	
X301	1-527-345-81	OSCILLATOR, CRYSTAL (4.43MHz)		CN102	1-565-209-11	CONNECTOR, FPC (ZIF) 26P	
*****				CN103	*1-564-006-21	PIN, CONNECTOR 7P	
*****				CN104	1-506-472-11	PIN, CONNECTOR 7P	
*****				<u>DIODE</u>			
*****				D101	8-719-100-05	DIODE 1S2837	
*****				<u>IC</u>			
*****				IC501	8-759-927-52	IC BA7036LS	
*****				IC502	8-759-100-93	IC UPC393G2	
*****				<u>COIL</u>			
*****				L201	1-410-389-11	INDUCTOR CHIP 47UH	
*****				L301	1-408-777-00	INDUCTOR CHIP 10UH	
*****				L401	1-408-793-21	INDUCTOR CHIP 220UH	
*****				L402	1-408-777-00	INDUCTOR CHIP 10UH	
*****				L501	1-408-777-00	INDUCTOR CHIP 10UH	
*****				<u>TRANSISTOR</u>			
*****				Q101	8-729-202-38	TRANSISTOR 2SC3326N	
*****				Q102	8-729-202-38	TRANSISTOR 2SC3326N	
*****				Q103	8-729-202-38	TRANSISTOR 2SC3326N	
*****				Q104	8-729-202-38	TRANSISTOR 2SC3326N	
*****				Q105	8-729-901-05	TRANSISTOR DTA124EK	
*****				Q106	8-729-901-05	TRANSISTOR DTA124EK	
*****				Q107	8-729-901-01	TRANSISTOR DTC144EX	
*****				Q108	8-729-901-01	TRANSISTOR DTC144EX	
*****				Q109	8-729-320-17	TRANSISTOR 2SA1122CD	
*****				Q201	8-729-901-01	TRANSISTOR DTC144EX	
*****				Q202	8-729-901-02	TRANSISTOR DTC124XX	

When indicating parts by reference number, please include the board name.

RP-52P
SE-7P

Ref.No	Part No.	Description	Remark
C134	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C135	1-163-989-11	CERAMIC CHIP 0.033MF	10% 25V

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IC101	8-752-003-40	IC CX20034	
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COIL

L101	1-408-794-00	INDUCTOR CHIP 270UH	
L102	1-410-385-11	INDUCTOR CHIP 22UH	
L103	1-408-791-00	INDUCTOR CHIP 150UH	
L104	1-408-794-00	INDUCTOR CHIP 270UH	
L105	1-410-383-11	INDUCTOR CHIP 15UH	
L106	1-408-797-11	INDUCTOR CHIP 470UH	
L107	1-410-381-11	INDUCTOR CHIP 10UH	
L108	1-410-383-11	INDUCTOR CHIP 15UH	

RESISTOR

R101	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R102	1-216-082-00	METAL GLAZE 24K	5% 1/10W
R103	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R104	1-216-058-00	METAL GLAZE 1.8K	5% 1/10W
R105	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R106	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R107	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R108	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R109	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R110	1-216-089-00	METAL GLAZE 47K	5% 1/10W

R111	1-216-082-00	METAL GLAZE 24K	5% 1/10W
R112	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R113	1-216-055-00	METAL GLAZE 1.8K	5% 1/10W
R114	1-216-056-00	METAL GLAZE 1.8K	5% 1/10W
R115	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R116	1-216-023-00	METAL GLAZE 82	5% 1/10W
R117	1-216-023-00	METAL GLAZE 82	5% 1/10W
R119	1-216-089-00	METAL GLAZE 47K	5% 1/10W
R121	1-216-053-00	METAL GLAZE 1.5K	5% 1/10W
R122	1-216-085-00	METAL GLAZE 33K	5% 1/10W

R123	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R124	1-216-085-00	METAL GLAZE 33K	5% 1/10W
R125	1-216-081-00	METAL GLAZE 22K	5% 1/10W
R126	1-216-296-00	METAL GLAZE 0	5% 1/8W

VARIABLE RESISTOR

RV101	1-230-871-11	RES. ADJ. METAL GLAZE 22K	
RV102	1-230-871-11	RES. ADJ. METAL GLAZE 22K	
RV103	1-230-521-11	RES. ADJ. METAL GLAZE 2.2K	
RV104	1-230-521-11	RES. ADJ. METAL GLAZE 2.2K	

*A-7061-504-A SE-7 (P) BOARD, COMPLETE (Ref.No.3,000 Series)

3-671-893-00 CLAMP (LOW TYPE)
*3-697-992-01 GUARD, REEL MOTOR

CAPACITOR

C001	1-124-584-00	ELECT 100MF	20% 10V
C002	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C003	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C004	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C020	1-124-584-00	ELECT 100MF	20% 10V
C021	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C032	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C033	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C050	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C051	1-163-038-00	CERAMIC CHIP 0.1MF	25V

C201	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C203	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C213	1-163-141-00	CERAMIC CHIP 0.001MF	50V
C214	1-163-141-00	CERAMIC CHIP 0.001MF	50V
C215	1-163-141-00	CERAMIC CHIP 0.001MF	50V

C216	1-163-141-00	CERAMIC CHIP 0.001MF	50V
C219	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C220	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C221	1-126-157-11	ELECT 10MF	20% 10V
C222	1-163-021-00	CERAMIC CHIP 0.01MF	50V

C223	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C224	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C225	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C226	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C228	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V

C229	1-126-157-11	ELECT 10MF	20% 10V
C230	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C231	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C232	1-163-209-00	CERAMIC CHIP 0.0015MF	5% 50V
C233	1-163-209-00	CERAMIC CHIP 0.0015MF	5% 50V

C235	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C236	1-163-019-00	CERAMIC CHIP 0.0068MF	10% 50V
C237	1-124-967-11	ELECT 10MF	20% 10V
C238	1-124-499-11	ELECT 1MF	20% 50V
C239	1-163-021-00	CERAMIC CHIP 0.01MF	50V

C240	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C241	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C242	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C243	1-124-768-11	ELECT 4.7MF	20% 50V
C244	1-126-157-11	ELECT 10MF	20% 10V

C245	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C246	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C247	1-124-767-00	ELECT 2.2MF	20% 50V
C248	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C249	1-124-499-11	ELECT 1MF	20% 50V

C250	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
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When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C251	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C705	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C255	1-124-584-00	ELECT 100MF	20% 10V	C706	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C256	1-124-584-00	ELECT 100MF	20% 10V	C707	1-124-234-00	ELECT 22MF	20% 16V
C257	1-126-094-11	ELECT 4.7MF	20% 25V	C708	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C258	1-124-257-00	ELECT 2.2MF	20% 50V	C709	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C259	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C710	1-124-256-00	ELECT 1.5MF	20% 50V
C260	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C711	1-163-989-11	CERAMIC CHIP 0.033MF	10% 25V
C261	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C712	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C262	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C713	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
C264	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	C714	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C265	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C716	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C451	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C717	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C461	1-163-077-00	CERAMIC CHIP 0.1MF	10% 25V	C718	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C462	1-124-257-00	ELECT 2.2MF	20% 50V	C720	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C463	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C721	1-163-145-00	CERAMIC CHIP 0.0015MF	5% 50V
C464	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C722	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C465	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C723	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C470	1-126-071-21	TANTAL CHIP 0.15MF	10% 35V	C724	1-163-275-91	CERAMIC CHIP 0.001MF	5% 50V
C471	1-164-157-11	CERAMIC CHIP 0.068MF	10% 25V	C725	1-163-111-00	CERAMIC CHIP 55PF	5% 50V
C472	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	C726	1-163-133-00	CERAMIC CHIP 470PF	5% 50V
C473	1-163-141-00	CERAMIC CHIP 0.001MF	50V	C727	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C474	1-163-141-00	CERAMIC CHIP 0.001MF	50V	C735	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C475	1-163-141-00	CERAMIC CHIP 0.001MF	50V	C736	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C476	1-163-141-00	CERAMIC CHIP 0.001MF	50V	C740	1-124-257-00	ELECT 2.2MF	20% 50V
C477	1-163-141-00	CERAMIC CHIP 0.001MF	50V	<u>CONNECTOR</u>			
C478	1-163-141-00	CERAMIC CHIP 0.001MF	50V	CN001	*1-564-011-51	PIN, CONNECTOR 12P	
C479	1-163-021-00	CERAMIC CHIP 0.01MF	50V	CN002	*1-564-011-31	PIN, CONNECTOR 12P	
C485	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V	CN003	*1-564-004-51	PIN, CONNECTOR 5P	
C501	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN004	*1-566-943-11	CONNECTOR, BOARD TO BOARD 18P	
C502	1-124-584-00	ELECT 100MF	20% 10V	CN005	*1-566-943-11	CONNECTOR, BOARD TO BOARD 18P	
C503	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN006	*1-566-943-11	CONNECTOR, BOARD TO BOARD 18P	
C504	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	CN007	*1-566-943-11	CONNECTOR, BOARD TO BOARD 18P	
C505	1-163-101-00	CERAMIC CHIP 22PF	5% 50V	CN008	*1-566-470-11	PIN, CONNECTOR 5P	
C506	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN009	*1-564-683-11	PIN, CONNECTOR 13P	
C507	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN011	*1-566-477-11	PIN, CONNECTOR 12P	
C508	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN013	*1-566-472-11	PIN, CONNECTOR 7P	
C509	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN014	*1-566-641-11	CONNECTOR, HINGE (TAB) 18P	
C510	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN015	*1-566-941-11	CONNECTOR, HINGE (TAB) 30P	
C511	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN016	*1-566-641-11	CONNECTOR, HINGE (TAB) 18P	
C512	1-163-038-00	CERAMIC CHIP 0.1MF	25V	CN017	*1-565-211-11	CONNECTOR, FCC (ZIF) 22P	
C513	1-124-584-00	ELECT 100MF	20% 10V	CN018	*1-565-212-11	CONNECTOR, FCC (ZIF) 25P	
C521	1-162-636-11	CERAMIC CHIP 1MF	16V	<u>DIODE</u>			
C511	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	D001	8-719-404-12	DIODE MA159	
C512	1-163-109-00	CERAMIC CHIP 47PF	5% 50V	D008	8-719-100-03	DIODE 1S2835	
C513	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	D211	8-719-101-23	DIODE 1S123	
C514	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	D212	8-719-100-03	DIODE 1S2835	
C515	1-163-141-00	CERAMIC CHIP 0.001MF	50V	D213	8-719-100-03	DIODE 1S2835	
C516	1-163-021-00	CERAMIC CHIP 0.01MF	50V	D217	8-719-801-48	DIODE 1S5193	
C517	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	D224	8-719-801-45	DIODE 1S5187	
C701	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	D231	8-719-801-48	DIODE 1S5193	
C702	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	D232	8-719-101-23	DIODE 1S5123	
C703	1-163-275-91	CERAMIC CHIP 0.001MF	5% 50V				
C704	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
D233	8-719-801-48	D100E 1S5193		L502	1-408-978-21	INDUCTOR 47UH	
D390	8-719-100-05	D100E 1S2837		L503	1-408-978-21	INDUCTOR 47UH	
D451	8-719-100-05	D100E 1S2837		L504	1-408-978-21	INDUCTOR 47UH	
D452	8-719-100-05	D100E 1S2837		TRANSISTOR			
D462	8-719-801-48	D100E 1S5193		Q054	8-729-901-01	TRANSISTOR DTC144EX	
D463	8-719-100-03	D100E 1S2835		Q090	8-729-901-01	TRANSISTOR DTC144EX	
D470	8-719-100-05	D100E 1S2837		Q091	8-729-901-01	TRANSISTOR DTC144EX	
D485	8-719-801-48	D100E 1S5193		Q205	8-729-600-90	TRANSISTOR 2SC1623	
D611	8-719-100-03	D100E 1S2835		Q227	8-729-901-06	TRANSISTOR DTA144EX	
D612	8-719-100-05	D100E 1S2837		Q229	8-729-901-06	TRANSISTOR DTA144EX	
D613	8-719-100-05	D100E 1S2837		Q230	8-729-901-01	TRANSISTOR DTC144EX	
D614	8-719-100-05	D100E 1S2837		Q231	8-729-903-29	TRANSISTOR DTA144TX	
D620	8-719-100-05	D100E 1S2837		Q233	8-729-901-01	TRANSISTOR DTC144EX	
D701	8-719-100-05	D100E 1S2837		Q235	8-729-901-01	TRANSISTOR DTC144EX	
FILTER				Q238	8-729-901-01	TRANSISTOR DTC144EX	
FL701	1-235-612-21	BPF 15KHz		Q240	8-729-901-01	TRANSISTOR DTC144EX	
FL702	1-235-611-21	BPF 45KHz		Q242	8-729-901-01	TRANSISTOR DTC144EX	
IC				Q243	8-729-901-01	TRANSISTOR DTC144EX	
IC001	8-752-808-24	IC CXP5048H-1830		Q244	8-729-901-01	TRANSISTOR DTC144EX	
IC002	8-752-808-26	IC CXP5048H-1820		Q245	8-729-901-06	TRANSISTOR DTA144EX	
IC003	8-759-144-21	IC UPD75106G-573-1B		Q249	8-729-901-06	TRANSISTOR DTA144EX	
IC004	8-759-201-01	IC TC4066BF		Q250	8-729-100-67	TRANSISTOR 2SC1623-L7	
IC005	8-759-201-61	IC TC40H004F		Q251	8-729-100-67	TRANSISTOR 2SC1623-L7	
IC201	8-759-803-47	IC LA5005M		Q252	8-729-100-76	TRANSISTOR 2SA812	
IC202	8-759-100-94	IC UPC358G2		Q253	8-729-100-76	TRANSISTOR 2SA812	
IC204	8-759-971-25	IC MB674169U		Q254	8-729-901-01	TRANSISTOR DTC144EX	
IC205	8-759-932-07	IC MB674101PF		Q256	8-729-901-01	TRANSISTOR DTC144EX	
IC206	8-759-010-45	IC MC140708F-T1		Q257	8-729-901-06	TRANSISTOR DTA144EX	
IC205	8-759-200-78	IC TC4030BF		Q258	8-729-901-06	TRANSISTOR DTA144EX	
IC210	8-752-003-50	IC CX20035		Q281	8-729-901-01	TRANSISTOR DTC144EX	
IC211	8-759-925-66	IC BA6303F		Q332	8-729-901-06	TRANSISTOR DTA144EX	
IC212	8-759-701-36	IC NJM3403AM		Q451	8-729-901-01	TRANSISTOR DTC144EX	
IC213	8-759-201-01	IC TC4066BF		Q452	8-729-901-06	TRANSISTOR DTA144EX	
IC213	8-759-303-62	IC HD14066BFP-T1		Q453	8-729-901-06	TRANSISTOR DTA144EX	
IC214	8-759-201-00	IC TC4052BF		Q454	8-729-901-06	TRANSISTOR DTA144EX	
IC215	8-759-100-94	IC UPC358G2		Q455	8-729-901-06	TRANSISTOR DTA144EX	
IC216	8-759-200-81	IC TC4053BF		Q461	8-729-901-01	TRANSISTOR DTC144EX	
IC217	8-759-200-81	IC TC4053BF		Q462	8-729-901-01	TRANSISTOR DTC144EX	
IC216	8-759-200-81	IC TC4053BF		Q463	8-729-901-01	TRANSISTOR DTC144EX	
IC218	8-759-303-56	IC HD14053BFP-T1		Q470	8-729-100-76	TRANSISTOR 2SA812	
IC219	8-759-100-94	IC UPC358G2		Q471	8-729-901-01	TRANSISTOR DTC144EX	
IC220	8-759-200-90	IC TC4528BF		Q485	8-729-901-06	TRANSISTOR DTA144EX	
IC401	8-759-200-90	IC TC4538BF		Q501	8-729-901-01	TRANSISTOR DTC144EX	
IC402	8-759-200-68	IC TC4011BF		Q611	8-729-903-30	TRANSISTOR DTC144T	
IC501	8-759-321-31	IC HD6380520-AB2F		Q614	8-729-100-66	TRANSISTOR 2SC1623	
IC502	8-759-937-56	IC S-8054ALB-LM-S		Q620	8-729-901-01	TRANSISTOR DTA144EX	
IC701	8-759-928-56	IC CXA1042M		Q621	8-729-901-01	TRANSISTOR DTA144EX	
IC703	8-759-100-95	IC UPC3246Z		Q702	8-729-100-67	TRANSISTOR 2SC1623-L7	
COIL				Q704	8-729-100-76	TRANSISTOR 2SA812	
L501	1-408-978-21	INDUCTOR 47UH		Q705	8-729-100-67	TRANSISTOR 2SC1623-L7	
				Q706	8-729-100-67	TRANSISTOR 2SC1623-L7	
				Q707	8-729-100-67	TRANSISTOR 2SC1623-L7	
				Q708	8-729-100-67	TRANSISTOR 2SC1623-L7	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
Q709	8-729-100-76	TRANSISTOR 2SA812		R205	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
Q710	8-729-100-67	TRANSISTOR 2SC1623-L7		R209	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
Q717	8-729-901-04	TRANSISTOR DTA114EK		R210	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
RESISTOR				R211	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R001	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W		R212	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R003	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R215	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R004	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R216	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R005	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R217	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R007	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W		R224	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R008	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W		R225	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R009	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R226	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R010	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R227	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R011	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R236	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R012	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R238	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R013	1-216-081-00	METAL GLAZE 22K 5% 1/10W		R239	1-216-675-11	METAL CHIP 10K 0.50% 1/10W	
R014	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		R240	1-216-685-11	METAL CHIP 27K 0.50% 1/10W	
R015	1-216-081-00	METAL GLAZE 22K 5% 1/10W		R241	1-216-671-11	METAL CHIP 6.8K 0.50% 1/10W	
R016	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R242	1-216-685-11	METAL CHIP 27K 0.50% 1/10W	
R01A	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R243	1-216-669-11	METAL CHIP 5.6K 0.50% 1/10W	
R020	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R244	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R021	1-216-295-00	METAL GLAZE 0 5% 1/10W		R245	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R022	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R246	1-216-683-11	METAL CHIP 22K 0.50% 1/10W	
R023	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R247	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R026	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R248	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R027	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R249	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R028	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R250	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R030	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R251	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R031	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R252	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R032	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R253	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R033	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R254	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R034	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R255	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R039	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R256	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R040	1-216-295-00	METAL GLAZE 0 5% 1/10W		R257	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R050	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R258	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R058	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R259	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R061	1-216-036-00	METAL GLAZE 270 5% 1/10W		R260	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R062	1-216-036-00	METAL GLAZE 270 5% 1/10W		R261	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R090	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W		R262	1-216-080-00	METAL GLAZE 20K 5% 1/10W	
R099	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R269	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R151	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R289	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R152	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R290	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R153	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R291	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R154	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R292	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R155	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R294	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R156	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R295	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R157	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R296	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R158	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R298	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R160	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R299	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R161	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R300	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R163	1-216-073-00	METAL GLAZE 10K 5% 1/10W		R301	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R170	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		R303	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R171	1-216-097-00	METAL GLAZE 100K 5% 1/10W		R305	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
				R306	1-216-077-00	METAL GLAZE 15K 5% 1/10W	

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R307	1-216-043-00	METAL GLAZE	560 5% 1/10W	R372	1-216-681-11	METAL CHIP	18K 0.50% 1/10W
R311	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R373	1-216-075-00	METAL GLAZE	12K 5% 1/10W
R312	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R375	1-216-697-11	METAL CHIP	82K 0.50% 1/10W
R313	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R376	1-216-107-00	METAL GLAZE	270K 5% 1/10W
R314	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R377	1-216-107-00	METAL GLAZE	270K 5% 1/10W
R315	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R380	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R316	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R381	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R317	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R382	1-216-101-00	METAL GLAZE	150K 5% 1/10W
R318	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R383	1-216-683-11	METAL CHIP	22K 0.50% 1/10W
R319	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R384	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R320	1-216-665-11	METAL CHIP	27K 0.50% 1/10W	R385	1-216-683-11	METAL CHIP	22K 0.50% 1/10W
R322	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R386	1-216-667-11	METAL CHIP	4.7K 0.50% 1/10W
R324	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R388	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R326	1-216-109-00	METAL GLAZE	330K 5% 1/10W	R394	1-216-035-00	METAL GLAZE	270 5% 1/10W
R327	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R396	1-216-699-11	METAL CHIP	100K 0.50% 1/10W
R328	1-216-091-00	METAL GLAZE	56K 5% 1/10W	R397	1-216-660-11	METAL CHIP	16K 0.50% 1/10W
R329	1-216-117-00	METAL GLAZE	680K 5% 1/10W	R398	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R330	1-216-119-00	METAL GLAZE	680K 5% 1/10W	R399	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R331	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R402	1-216-295-00	METAL GLAZE	0 5% 1/10W
R332	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R404	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R334	1-216-115-00	METAL GLAZE	560K 5% 1/10W	R405	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R335	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R406	1-216-295-00	METAL GLAZE	0 5% 1/10W
R336	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R408	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R337	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R451	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R338	1-216-121-00	METAL GLAZE	1M 5% 1/10W	R452	1-216-115-00	METAL GLAZE	560K 5% 1/10W
R339	1-216-748-11	METAL GLAZE	39K 5% 1/10W	R453	1-216-669-11	METAL CHIP	39K 0.50% 1/10W
R340	1-216-567-11	METAL CHIP	4.7K 0.50% 1/10W	R454	1-216-673-11	METAL CHIP	8.2K 0.50% 1/10W
R341	1-216-663-11	METAL CHIP	3.3K 0.50% 1/10W	R456	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R345	1-216-105-00	METAL GLAZE	220K 5% 1/10W	R461	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R346	1-216-105-00	METAL GLAZE	220K 5% 1/10W	R462	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R347	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R463	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R348	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R464	1-216-093-00	METAL GLAZE	68K 5% 1/10W
R349	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R465	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R350	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R466	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R352	1-216-685-11	METAL CHIP	27K 0.50% 1/10W	R467	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R353	1-216-663-11	METAL CHIP	3.3K 0.50% 1/10W	R468	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R354	1-216-689-11	METAL CHIP	39K 0.50% 1/10W	R470	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R355	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R471	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R356	1-216-693-11	METAL CHIP	56K 0.50% 1/10W	R472	1-216-109-00	METAL GLAZE	330K 5% 1/10W
R357	1-216-691-11	METAL CHIP	47K 0.50% 1/10W	R473	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R358	1-216-663-11	METAL CHIP	3.3K 0.50% 1/10W	R474	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R359	1-216-686-11	METAL CHIP	27K 0.50% 1/10W	R475	1-216-103-00	METAL GLAZE	180K 5% 1/10W
R360	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R476	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R361	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R477	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R362	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R478	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R363	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R479	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R364	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R480	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R365	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R481	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R366	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R482	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R367	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R485	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R368	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R486	1-216-078-00	METAL GLAZE	16K 5% 1/10W
R370	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R501	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R371	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R502	1-216-073-00	METAL GLAZE	10K 5% 1/10W

When indicating parts by reference number, please include the board name.

ef.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R503	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R574	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R504	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R581	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R505	1-216-295-00	METAL GLAZE	0 5% 1/10W	R582	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R506	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R590	1-216-090-00	METAL GLAZE	51K 5% 1/10W
R507	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R591	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R508	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R611	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R509	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R612	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R510	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R614	1-216-069-00	METAL GLAZE	6.8K 5% 1/10W
R511	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R615	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R512	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R616	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R513	1-216-055-00	METAL GLAZE	1.8K 5% 1/10W	R617	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R514	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R618	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R515	1-216-674-11	METAL CHIP	9.1K 0.50% 1/10W	R619	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R516	1-216-687-11	METAL CHIP	33K 0.50% 1/10W	R620	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W
R517	1-216-674-11	METAL CHIP	9.1K 0.50% 1/10W	R621	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R518	1-216-687-11	METAL CHIP	33K 0.50% 1/10W	R623	1-216-295-00	METAL GLAZE	0 5% 1/10W
R519	1-216-687-11	METAL CHIP	33K 0.50% 1/10W	R630	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R520	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R631	1-216-295-00	METAL GLAZE	0 5% 1/10W
R522	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R632	1-216-637-11	METAL CHIP	270 0.50% 1/10W
R523	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R701	1-216-105-00	METAL GLAZE	220K 5% 1/10W
R524	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R702	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R525	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R703	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R526	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R704	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R527	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R705	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R528	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R706	1-216-117-00	METAL GLAZE	680K 5% 1/10W
R529	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R707	1-216-091-00	METAL GLAZE	56K 5% 1/10W
R530	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R708	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R531	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R709	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R532	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R710	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R533	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R711	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R534	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R712	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R535	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R713	1-216-111-00	METAL GLAZE	390K 5% 1/10W
R538	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R715	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R551	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R716	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W
R552	1-216-295-00	METAL GLAZE	0 5% 1/10W	R717	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R553	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R718	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R555	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R719	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R557	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R722	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R558	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R723	1-216-079-00	METAL GLAZE	18K 5% 1/10W
R560	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R724	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R561	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R725	1-216-045-00	METAL GLAZE	680 5% 1/10W
R562	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R726	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R563	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R727	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R564	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R728	1-216-033-00	METAL GLAZE	220 5% 1/10W
R565	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R729	1-216-035-00	METAL GLAZE	270 5% 1/10W
R566	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R730	1-216-041-00	METAL GLAZE	470 5% 1/10W
R567	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R731	1-216-072-00	METAL GLAZE	9.1K 5% 1/10W
R568	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R732	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R569	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R733	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R570	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R734	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R571	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R735	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R572	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R736	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R573	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R737	1-216-049-00	METAL GLAZE	1K 5% 1/10W

When indicating parts by reference number, please include the board name.

SE-7P

IG-2

MB-9P

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R738	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W	*A-7061-505-A MB-9(P)BOARD, COMPLETE(Ref.No.5,000 Series)			
R739	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W				
R740	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W				
R741	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W				
R742	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W				
R743	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W				
R744	1-216-079-00	METAL GLAZE 18K 5%	1/10W				
R745	1-216-088-00	METAL GLAZE 43K 5%	1/10W				
R762	1-216-073-00	METAL GLAZE 10K 5%	1/10W				
<u>VARIABLE RESISTOR</u>				<u>CAPACITOR</u>			
RV201	1-237-576-21	RES, ADJ, METAL GLAZE 220K		C001	1-163-035-00	CERAMIC CHIP 0.047MF	50V
RV202	1-237-576-21	RES, ADJ, METAL GLAZE 220K		C002	1-163-035-00	CERAMIC CHIP 0.047MF	50V
RV203	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K		C003	1-163-093-00	CERAMIC CHIP 10PF	5%
RV204	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K		C004	1-163-093-00	CERAMIC CHIP 10PF	5%
RV205	1-230-871-11	RES, ADJ, METAL GLAZE 22K		C005	1-163-035-00	CERAMIC CHIP 0.047MF	50V
RV206	1-230-870-11	RES, ADJ, METAL GLAZE 10K		C006	1-163-141-00	CERAMIC CHIP 0.001MF	5%
RV207	1-230-871-11	RES, ADJ, METAL GLAZE 22K		C007	1-163-141-00	CERAMIC CHIP 0.001MF	5%
RV208	1-230-870-11	RES, ADJ, METAL GLAZE 10K		C008	1-124-234-00	ELECT 22MF	20%
RV210	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K		C009	1-124-234-00	ELECT 22MF	20%
RV212	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K		C010	1-163-035-00	CERAMIC CHIP 0.047MF	50V
RV215	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K		C011	1-163-035-00	CERAMIC CHIP 0.047MF	50V
RV216	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K		C012	1-163-035-00	CERAMIC CHIP 0.047MF	50V
RV217	1-237-433-21	RES, ADJ, METAL GLAZE 470		C013	1-163-035-00	CERAMIC CHIP 0.047MF	20%
RV218	1-237-433-21	RES, ADJ, METAL GLAZE 470		C014	1-124-234-00	ELECT 22MF	10V
RV401	1-230-873-11	RES, ADJ, METAL GLAZE 47K		C051	1-163-035-00	CERAMIC CHIP 0.047MF	50V
RV701	1-230-873-11	RES, ADJ, METAL GLAZE 47K		<u>CONNECTOR</u>			
<u>CRYSTAL</u>				CN001	1-566-943-11	CONNECTOR, BOARD TO BOARD 18P	
X001	1-567-346-11	OSCILLATOR, CERAMIC (5MHz)		CN002	1-566-944-11	CONNECTOR, BOARD TO BOARD 22P	
X002	1-567-121-00	VIBRATOR, CRYSTAL (4.19MHz)		CN003	*1-566-005-21	PIN, CONNECTOR 6P	
X001	1-567-827-11	VIBRATOR, CRYSTAL (5.85MHz)		CN004	1-506-471-11	PIN, CONNECTOR 6P	
X202	1-567-504-B1	OSCILLATOR, CRYSTAL (4.43MHz)		CN005	1-506-473-11	PIN, CONNECTOR 6P	
X501	1-567-132-00	VIBRATOR, CERAMIC (6MHz)		CN006	1-506-470-11	PIN, CONNECTOR 5P	
*****				<u>DIODE</u>			
*A-7070-523-A IG-2 BOARD, COMPLETE (Ref.No.3,100 Series)				D002	8-719-100-03	DIODE 1S2835	
				D003	8-719-100-03	DIODE 1S2835	
				D051	8-719-101-23	DIODE 1S5123	
				D052	8-719-101-23	DIODE 1S5123	
				D053	8-719-101-23	DIODE 1S5123	
				D054	8-719-100-03	DIODE 1S2835	
				<u>IC</u>			
				IC001	8-759-141-31	IC UP075106G-574-1B	
				IC003	8-759-200-81	IC TC4053BF	
				IC004	8-759-603-27	IC MS201FP	
				IC005	8-759-603-27	IC MS201FP	
				<u>COIL</u>			
				L001	1-408-409-00	INDUCTOR 10UH	
				L002	1-408-409-00	INDUCTOR 10UH	
				L003	1-408-409-00	INDUCTOR 10UH	
				L004	1-408-429-00	INDUCTOR 470UH	
				L005	1-408-429-00	INDUCTOR 470UH	
				L051	1-410-393-11	INDUCTOR CHIP 100UH	
				<u>TRANSISTOR</u>			
				Q001	8-729-901-01	TRANSISTOR DTC144EX	

When indicating parts by reference number, please include the board name.

MB-9P

PA-11P

f.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
J002	8-729-901-01	TRANSISTOR DTC144EX		R065	1-216-034-00	METAL GLAZE 240 5%	1/10W
J003	8-729-901-01	TRANSISTOR DTC144EX		R066	1-216-089-00	METAL GLAZE 47K 5%	1/10W
J004	8-729-901-06	TRANSISTOR DTA144EX		R067	1-216-089-00	METAL GLAZE 47K 5%	1/10W
J005	8-729-901-06	TRANSISTOR DTA144EX		R068	1-216-089-00	METAL GLAZE 47K 5%	1/10W
J006	8-729-901-01	TRANSISTOR DTC144EX		R069	1-216-089-00	METAL GLAZE 47K 5%	1/10W
RESISTOR				R070	1-216-073-00	METAL GLAZE 10K 5%	1/10W
I001	1-216-079-00	METAL GLAZE 18K 5%	1/10W	SWITCH			
I002	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S001	1-554-371-51	SWITCH, TACT (EJECT)	
I003	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S002	1-554-371-51	SWITCH, TACT (PB)	
I004	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S003	1-554-371-51	SWITCH, TACT (PAUSE)	
I005	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S004	1-554-371-51	SWITCH, TACT (REW)	
I006	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S005	1-554-371-51	SWITCH, TACT (- X1)	
I008	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S006	1-554-371-51	SWITCH, TACT (STOP)	
I010	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S007	1-554-371-51	SWITCH, TACT (REC)	
I011	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S008	1-554-371-51	SWITCH, TACT (FF)	
I012	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S009	1-554-371-51	SWITCH, TACT (POWER)	
I013	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S010	1-554-371-51	SWITCH, TACT (- X17)	
I014	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S011	1-554-371-51	SWITCH, TACT (- X3)	
I015	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S012	1-554-371-51	SWITCH, TACT (- SLOW)	
I016	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S013	1-554-371-51	SWITCH, TACT (4 SLOW)	
I017	1-216-093-00	METAL GLAZE 68K 5%	1/10W	S014	1-554-371-51	SWITCH, TACT (X2)	
R018	1-216-093-00	METAL GLAZE 68K 5%	1/10W	S015	1-554-371-51	SWITCH, TACT (X19)	
R019	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	FILTER			
R020	1-216-093-00	METAL GLAZE 68K 5%	1/10W	T001	1-235-900-11	FILTER, LOW PASS	
R021	1-216-093-00	METAL GLAZE 68K 5%	1/10W	T002	1-235-900-11	FILTER, LOW PASS	
R022	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	CRYSTAL			
R023	1-216-047-00	METAL GLAZE 820 5%	1/10W	X001	1-567-121-00	VIBRATOR, CRYSTAL (4.19MHz)	
R024	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W	*****			
R025	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	*A-7061-048-A PA-11 (P) BOARD, COMPLETE (Ref.No.5,500			
R026	1-216-047-00	METAL GLAZE 820 5%	1/10W	***** Series)			
R027	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W	CAPACITOR			
R028	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	C001	1-163-012-00	CERAMIC CHIP 0.0018MF 10% 50V	
R029	1-216-089-00	METAL GLAZE 47K 5%	1/10W	C002	1-124-225-00	ELECT 100MF 20% 6.3V	
R030	1-216-073-00	METAL GLAZE 10K 5%	1/10W	C003	1-126-154-11	ELECT 47MF 20% 6.3V	
R031	1-216-049-00	METAL GLAZE 1K 5%	1/10W	C004	1-126-154-11	ELECT 47MF 20% 6.3V	
R032	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	C005	1-130-490-11	MYLAR 0.039MF 5% 50V	
R033	1-216-097-00	METAL GLAZE 100K 5%	1/10W	C006	1-163-125-00	CERAMIC CHIP 220PF 5% 1/10W	
R034	1-216-097-00	METAL GLAZE 100K 5%	1/10W	C007	1-130-479-00	MYLAR 0.0047MF 5% 50V	
R035	1-216-072-00	METAL GLAZE 9.1K 5%	1/10W	C008	1-126-154-11	ELECT 47MF 20% 6.3V	
R036	1-216-081-00	METAL GLAZE 22K 5%	1/10W	C009	1-163-088-00	CERAMIC CHIP 5PF 0.25PF 50V	
R037	1-216-081-00	METAL GLAZE 22K 5%	1/10W	C010	1-126-154-11	ELECT 47MF 20% 6.3V	
R038	1-216-089-00	METAL GLAZE 47K 5%	1/10W	C011	1-130-469-00	MYLAR 680PF 5% 50V	
R039	1-216-099-00	METAL GLAZE 120K 5%	1/10W	C012	1-130-482-00	MYLAR 0.0082MF 5% 50V	
R040	1-216-099-00	METAL GLAZE 120K 5%	1/10W	C013	1-135-099-85	TANTAL. CHIP 2.2MF 10% 6.3V	
R041	1-216-085-00	METAL GLAZE 33K 5%	1/10W	C014	1-135-100-21	TANTAL. CHIP 6.8MF 20% 6.3V	
R042	1-216-079-00	METAL GLAZE 18K 5%	1/10W	C015	1-135-072-21	TANTAL. CHIP 0.22MF 10% 35V	
R043	1-216-062-00	METAL GLAZE 3.6K 5%	1/10W	C016	1-126-153-11	ELECT 22MF 20% 6.3V	
R044	1-216-054-00	METAL GLAZE 1.6K 5%	1/10W				

When indicating parts by reference number, please include the board name.

Ref.No	Part.No.	Description	Remark	Ref.No	Part.No.	Description	Remark
C017	1-163-117-00	CERAMIC CHIP 100PF	5% 50V			<u>COIL</u>	
C018	1-126-153-11	ELECT 22NF	20% 6.3V				
C019	1-126-153-11	ELECT 22NF	20% 6.3V				
C031	1-124-225-00	ELECT 100MF	20% 6.3V	1001	1-408-793-21	INDUCTOR CHIP 220UH	
C032	1-124-225-00	ELECT 100MF	20% 6.3V			<u>TRANSISTOR</u>	
C033	1-163-035-00	CERAMIC CHIP 0.047MF	50V	0001	8-729-202-38	TRANSISTOR 2SC3326N	
C034	1-126-154-11	ELECT 47NF	20% 6.3V	0002	8-729-202-38	TRANSISTOR 2SC3326N	
C035	1-126-154-11	ELECT 47NF	20% 6.3V	0031	8-729-901-06	TRANSISTOR DTA144EK	
C036	1-163-035-00	CERAMIC CHIP 0.047MF	50V	0032	8-729-901-06	TRANSISTOR DTA144EK	
C037	1-126-154-11	ELECT 47NF	20% 6.3V	0033	8-729-901-06	TRANSISTOR DTA144EK	
C038	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V	0034	8-729-100-75	TRANSISTOR 2SA812+M5	
C039	1-163-021-00	CERAMIC CHIP 0.01MF	50V	0035	8-729-100-75	TRANSISTOR 2SA812+M5	
C040	1-163-021-00	CERAMIC CHIP 0.01MF	50V	0051	8-729-202-38	TRANSISTOR 2SC3326N	
C041	1-109-814-11	MICA 220PF	5% 100V	0052	8-729-202-38	TRANSISTOR 2SC3326N	
C042	1-126-154-11	ELECT 47NF	20% 6.3V			<u>RESISTOR</u>	
C043	1-126-153-11	ELECT 22NF	20% 6.3V	R001	1-216-043-00	METAL GLAZE 560 5%	1/10W
C044	1-126-154-11	ELECT 47NF	20% 6.3V	R002	1-216-078-00	METAL GLAZE 15K 5%	1/10W
C051	1-163-012-00	CERAMIC CHIP 0.0018MF	10% 50V	R003	1-216-072-00	METAL GLAZE 9.1K 5%	1/10W
C052	1-124-225-00	ELECT 100MF	20% 6.3V	R004	1-216-089-00	METAL GLAZE 47K 5%	1/10W
C053	1-126-154-11	ELECT 47NF	20% 6.3V	R005	1-216-073-00	METAL GLAZE 10K 5%	1/10W
C054	1-126-154-11	ELECT 47NF	20% 6.3V	R006	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
C055	1-130-490-11	MYLAR 0.039MF	5% 50V	R007	1-216-073-00	METAL GLAZE 10K 5%	1/10W
C056	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	R008	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
C057	1-130-479-00	MYLAR 0.0047MF	5% 50V	R009	1-216-045-00	METAL GLAZE 680 5%	1/10W
C058	1-126-154-11	ELECT 47NF	20% 6.3V	R010	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
C059	1-163-088-00	CERAMIC CHIP 5PF	0.25PF 50V	R012	1-215-447-00	METAL 12K 1%	1/6W
C060	1-126-154-11	ELECT 47NF	20% 6.3V	R013	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
C061	1-130-459-00	MYLAR 680PF	5% 50V	R014	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
C062	1-130-482-00	MYLAR 0.0082MF	5% 50V	R015	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
C063	1-135-099-85	TANTAL. CHIP 2.2MF	10% 6.3V	R016	1-216-060-00	METAL GLAZE 3K 5%	1/10W
C064	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V	R017	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W
C065	1-135-072-21	TANTAL. CHIP 0.22MF	10% 35V	R018	1-216-748-11	METAL GLAZE 39K 5%	1/10W
C066	1-126-153-11	ELECT 22NF	20% 6.3V	R019	1-216-077-00	METAL GLAZE 15K 5%	1/10W
C067	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	R020	1-216-089-00	METAL GLAZE 47K 5%	1/10W
C068	1-126-153-11	ELECT 22NF	20% 6.3V	R021	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
C069	1-126-153-11	ELECT 22NF	20% 6.3V	R022	1-216-067-00	METAL GLAZE 2.2K 5%	1/10W
		<u>CONNECTOR</u>		R023	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
CND01	1-563-314-11	CONNECTOR, BOARD TO BOARD 20P		R024	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
		<u>DIODE</u>		R031	1-216-117-00	METAL GLAZE 680K 5%	1/10W
D031	8-719-100-03	DIODE 1S2835		R032	1-215-485-00	METAL 470K 1%	1/6W
D032	8-719-100-03	DIODE 1S2835		R033	1-216-022-00	METAL GLAZE 75 5%	1/10W
		<u>IC</u>		R034	1-216-039-00	METAL GLAZE 390 5%	1/10W
IC001	8-752-009-90	IC CX20099		R035	1-216-049-00	METAL GLAZE 1K 5%	1/10W
IC002	8-759-700-43	IC NJM4558M		R036	1-215-423-00	METAL 1.2K 1%	1/6W
IC003	8-759-700-43	IC NJM4558M		R037	1-215-431-00	METAL 2.7K 1%	1/6W
IC004	8-752-301-00	IC CX2010		R039	1-215-401-11	METAL 150 1%	1/6W
IC005	8-759-914-44	IC TL431QLPB		R040	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
				R041	1-216-295-00	METAL GLAZE 0 5%	1/10W
				R042	1-216-073-00	METAL GLAZE 10K 5%	1/10W
				R043	1-216-097-00	METAL GLAZE 100K 5%	1/10W
				R051	1-216-043-00	METAL GLAZE 560 5%	1/10W
				R052	1-216-078-00	METAL GLAZE 15K 5%	1/10W

When indicating parts by reference number, please include the board name.

if.No	Part No.	Description	Remark
1053	1-216-072-00	METAL GLAZE 9.7K 5%	1/10W
1054	1-216-089-00	METAL GLAZE 47K 5%	1/10W
1055	1-216-073-00	METAL GLAZE 10K 5%	1/10W
1056	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
1057	1-216-073-00	METAL GLAZE 10K 5%	1/10W
1058	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
1059	1-216-045-00	METAL GLAZE 680 5%	1/10W
1060	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
1062	1-215-447-00	METAL 12K 1%	1/6W
1063	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
1064	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
1065	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
1066	1-216-060-00	METAL GLAZE 3K 5%	1/10W
1067	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W
1068	1-216-748-11	METAL GLAZE 39K 5%	1/10W
1069	1-216-077-00	METAL GLAZE 15K 5%	1/10W
1070	1-216-089-00	METAL GLAZE 47K 5%	1/10W
1071	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
1072	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
1073	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
1074	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W

VARIABLE RESISTOR

RV001	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV002	1-230-521-11	RES, ADJ, METAL GLAZE 2.2K
RV031	1-230-521-11	RES, ADJ, METAL GLAZE 2.2K
RV032	1-230-529-11	RES, ADJ, METAL GLAZE 470K
RV051	1-230-524-11	RES, ADJ, METAL GLAZE 22K
RV052	1-230-521-11	RES, ADJ, METAL GLAZE 2.2K

*A-7051-505-A PD-16 (P) BOARD, COMPLETE (Ref.No.5,000
***** Series)

CAPACITOR

CB51	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB52	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB53	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
CB54	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
CB56	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V
CB57	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB58	1-135-145-11	TANTAL. CHIP 0.47MF	20% 25V
CB59	1-135-103-00	TANTAL. CHIP 2.3MF	20% 4V
CB60	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V
CB61	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
CB62	1-163-085-00	CERAMIC CHIP 2PF	0.25PF 50V
CB63	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB64	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB67	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
CB68	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
CB69	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
CB70	1-163-109-00	CERAMIC CHIP 47PF	5% 50V

Ref.No	Part No.	Description	Remark
CB71	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB72	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V
CB73	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V
CB74	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB75	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
CB76	1-163-133-00	CERAMIC CHIP 470PF	10% 50V
CB77	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB78	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V
CB79	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB80	1-135-100-21	TANTAL. CHIP 6.8MF	20% 6.3V
CB81	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB82	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB83	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
CB84	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB85	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
CB86	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
CB87	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB88	1-163-035-00	CERAMIC CHIP 0.047MF	50V
CB89	1-135-150-21	TANTAL. CHIP 3.3MF	10% 6.3V

CONNECTOR

CN851	1-565-107-11	CONNECTOR, ON BOARD (2MM) 35P
CN852	1-565-107-11	CONNECTOR, ON BOARD (2MM) 35P
CN853	1-506-777-11	CONNECTOR, BOARD TO BOARD 20P

DIODE

DB51	8-719-100-03	DIODE 1S2835
DB52	8-719-104-26	DIODE 1S2837-T1
DB53	8-719-100-05	DIODE 1S2837

IC

IC851	8-752-324-45	IC CXD10660-Z
IC852	8-759-929-17	IC CXD1051M
IC853	8-752-010-30	IC CX20103
IC854	8-752-010-20	IC CX20102
IC855	8-752-323-58	IC CXK5964M-12L
IC856	8-759-911-18	IC CX23011
IC857	8-759-911-19	IC CX23012
IC858	8-759-972-12	IC CF77305FT
IC859	8-752-808-18	IC CXPS024H-072Q
IC860	8-759-972-13	IC CF77309FR

COIL

L851	1-410-393-11	INDUCTOR CHIP 100UH
L852	1-410-393-11	INDUCTOR CHIP 100UH
L853	1-410-393-11	INDUCTOR CHIP 100UH
L855	1-410-393-11	INDUCTOR CHIP 100UH
L856	1-410-393-11	INDUCTOR CHIP 100UH
L857	1-410-393-11	INDUCTOR CHIP 100UH
L858	1-410-393-11	INDUCTOR CHIP 100UH
L859	1-410-393-11	INDUCTOR CHIP 100UH
L860	1-410-393-11	INDUCTOR CHIP 100UH
L861	1-410-393-11	INDUCTOR CHIP 100UH

When indicating parts by reference number, please include the board name.

PD-16P

DM-24

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
L862	1-410-393-11	INDUCTOR CHIP 100UH		*A-7061-508-A	DM-24 BOARD, COMPLETE (Ref. No. 6,000 Series)		
<u>TRANSISTOR</u>				1-559-764-11	WIRE, FLAT TYPE 30P		
Q851	8-729-102-06	TRANSISTOR 2SC2223		*3-704-198-61	SUPPORT, PC		
Q852	8-729-122-63	TRANSISTOR 2SA1226		<u>CAPACITOR</u>			
Q853	8-729-102-06	TRANSISTOR 2SC2223		C001	1-124-224-11	ELECT 47MF	20% 6.3V
<u>RESISTOR</u>				C002	1-126-157-11	ELECT 10MF	20% 10V
R851	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C003	1-126-157-11	ELECT 10MF	20% 10V
R852	1-216-085-00	METAL GLAZE 33K 5% 1/10W		C004	1-124-589-11	ELECT 47MF	20% 10V
R853	1-216-033-00	METAL GLAZE 220 5% 1/10W		C005	1-126-157-11	ELECT 10MF	20% 10V
R854	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		C006	1-126-157-11	ELECT 10MF	20% 10V
R855	1-216-081-00	METAL GLAZE 22K 5% 1/10W		C007	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R856	1-216-079-00	METAL GLAZE 18K 5% 1/10W		C008	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R857	1-216-077-00	METAL GLAZE 15K 5% 1/10W		C009	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
R858	1-216-077-00	METAL GLAZE 15K 5% 1/10W		C010	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R859	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C011	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R860	1-216-074-00	METAL GLAZE 31K 5% 1/10W		C012	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R861	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W		C013	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R862	1-216-025-00	METAL GLAZE 100 5% 1/10W		C014	1-124-589-11	ELECT 47MF	20% 10V
R863	1-216-041-00	METAL GLAZE 470 5% 1/10W		C015	1-126-160-11	ELECT 1MF	20% 50V
R864	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C016	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R866	1-216-041-00	METAL GLAZE 470 5% 1/10W		C017	1-126-160-11	ELECT 1MF	20% 50V
R867	1-216-041-00	METAL GLAZE 470 5% 1/10W		C018	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R868	1-216-295-00	METAL GLAZE 0 5% 1/10W		C019	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R869	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W		C020	1-163-135-00	CERAMIC CHIP 560PF	5% 50V
R870	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C021	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
R871	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C022	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
R872	1-216-049-00	METAL GLAZE 1K 5% 1/10W		C023	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
R873	1-216-047-00	METAL GLAZE 820 5% 1/10W		C024	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R874	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W		C025	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
R875	1-216-041-00	METAL GLAZE 470 5% 1/10W		C026	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
R876	1-216-045-00	METAL GLAZE 680 5% 1/10W		C027	1-126-160-11	ELECT 1MF	20% 50V
R879	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W		C028	1-124-589-11	ELECT 47MF	20% 10V
R880	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W		C029	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
R881	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W		C030	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
R882	1-216-043-00	METAL GLAZE 560 5% 1/10W		C031	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
R883	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C032	1-163-081-00	CERAMIC CHIP 0.22MF	20% 50V
R884	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C033	1-126-160-11	ELECT 1MF	20% 50V
R885	1-216-295-00	METAL GLAZE 0 5% 1/10W		C034	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
R886	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C035	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
R887	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W		C036	1-163-127-00	CERAMIC CHIP 270PF	5% 50V
R888	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W		C037	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
R889	1-216-073-00	METAL GLAZE 10K 5% 1/10W		C038	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
<u>VARIABLE RESISTOR</u>				C039	1-163-127-00	CERAMIC CHIP 270PF	5% 50V
RV851	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K		C040	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
RV854	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K		C041	1-163-038-00	CERAMIC CHIP 0.1MF	25% 25V
<u>CRYSTAL</u>				C042	1-126-157-11	ELECT 10MF	20% 10V
XS51	1-567-669-91	VIBRATOR, LITHIUM TANTALATE		C043	1-163-038-00	CERAMIC CHIP 0.1MF	25% 25V
XS52	1-567-964-21	OSCILLATOR, CHIP CERAMIC (5MHz)		C044	1-163-038-00	CERAMIC CHIP 0.1MF	25% 25V
				C045	1-163-038-00	CERAMIC CHIP 0.1MF	25% 25V
				C046	1-126-157-11	ELECT 10MF	20% 10V

When indicating parts by reference number, please include the board name.

f.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
047	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C101	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
048	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C102	1-126-160-11	ELECT 1MF	20% 50V
049	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C103	1-124-589-11	ELECT 47MF	20% 10V
050	1-163-115-00	CERAMIC CHIP 82PF	5% 50V	C104	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
051	1-163-116-00	CERAMIC CHIP 82PF	5% 50V	C105	1-126-160-11	ELECT 1MF	20% 50V
052	1-163-115-00	CERAMIC CHIP 82PF	5% 50V	C106	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
053	1-163-115-00	CERAMIC CHIP 82PF	5% 50V	C107	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
054	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C108	1-163-135-00	CERAMIC CHIP 560PF	5% 50V
055	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C109	1-163-093-00	CERAMIC CHIP 10PF	5% 50V
056	1-126-157-11	ELECT 10MF	20% 10V	C110	1-163-036-00	CERAMIC CHIP 0.068MF	50V
057	1-126-157-11	ELECT 10MF	20% 10V	C111	1-126-160-11	ELECT 1MF	20% 50V
058	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C112	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
059	1-124-589-11	ELECT 47MF	20% 10V	C113	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
060	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C114	1-126-157-11	ELECT 10MF	20% 10V
061	1-126-157-11	ELECT 10MF	20% 10V	C115	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
062	1-126-157-11	ELECT 10MF	20% 10V	C116	1-126-157-11	ELECT 10MF	20% 10V
063	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	C117	1-126-157-11	ELECT 10MF	20% 10V
064	1-126-157-11	ELECT 10MF	20% 10V	C118	1-124-465-00	ELECT 0.47MF	20% 50V
065	1-163-108-00	CERAMIC CHIP 43PF	5% 50V	C119	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
066	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C120	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
068	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C121	1-126-157-11	ELECT 10MF	20% 10V
069	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C122	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
070	1-126-157-11	ELECT 10MF	20% 10V	C123	1-163-036-00	CERAMIC CHIP 0.068MF	50V
071	1-163-081-00	CERAMIC CHIP 0.22MF	25V	C124	1-126-160-11	ELECT 1MF	20% 50V
072	1-126-157-11	ELECT 10MF	20% 10V	C125	1-126-160-11	ELECT 1MF	20% 50V
073	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C126	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
074	1-163-121-00	CERAMIC CHIP 150PF	5% 50V	C127	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
075	1-163-091-00	CERAMIC CHIP 8PF	0.25PF 50V	C128	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
076	1-163-099-00	CERAMIC CHIP 18PF	5% 50V	C129	1-124-589-11	ELECT 47MF	20% 10V
077	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C130	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
078	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C131	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
079	1-126-160-11	ELECT 1MF	20% 50V	C132	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
080	1-124-589-11	ELECT 47MF	20% 10V	C133	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
081	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C134	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
082	1-124-589-11	ELECT 47MF	20% 10V	C135	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
083	1-126-157-11	ELECT 10MF	20% 10V	C136	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
084	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C138	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
085	1-163-081-00	CERAMIC CHIP 0.22MF	25V	C139	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
086	1-126-157-11	ELECT 10MF	20% 10V	C140	1-124-589-11	ELECT 47MF	20% 10V
087	1-124-589-11	ELECT 47MF	20% 10V	C141	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
088	1-163-135-00	CERAMIC CHIP 560PF	5% 50V	C142	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
089	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C143	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
090	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C144	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
091	1-124-442-00	ELECT 330MF	20% 6.3V	C145	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
092	1-163-137-00	CERAMIC CHIP 680PF	5% 50V	C146	1-124-589-11	ELECT 47MF	20% 10V
093	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C147	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
094	1-126-160-11	ELECT 1MF	20% 50V	C148	1-163-241-11	CERAMIC CHIP 39PF	5% 50V
095	1-124-463-00	ELECT 0.1MF	20% 50V	C149	1-126-157-11	ELECT 10MF	20% 10V
096	1-124-463-00	ELECT 0.1MF	20% 50V	C150	1-126-157-11	ELECT 10MF	20% 10V
097	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C151	1-124-589-11	ELECT 47MF	20% 10V
098	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C152	1-124-589-11	ELECT 47MF	20% 10V
099	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C153	1-124-589-11	ELECT 47MF	20% 10V
C100	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C154	1-124-589-11	ELECT 47MF	20% 10V

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Ref. No	Part No.	Description	Remark	Ref. No	Part No.	Description	Remark
C155	1-130-487-00	MYLAR	0.022MF 5% 50V	C209	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C156	1-130-487-00	MYLAR	0.022MF 5% 50V	C210	1-124-589-11	ELECT 47MF	10V
C157	1-126-157-11	ELECT	10MF 20% 10V	C211	1-163-021-00	CERAMIC CHIP 0.01MF	10V
C158	1-126-157-11	ELECT	10MF 20% 10V	C212	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C159	1-126-157-11	ELECT	10MF 20% 10V	C213	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C160	1-126-157-11	ELECT	10MF 20% 10V	C214	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C161	1-124-589-11	ELECT	47MF 20% 10V	C215	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C162	1-124-589-11	ELECT	47MF 20% 10V	C216	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C163	1-124-589-11	ELECT	47MF 20% 10V	C217	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C164	1-124-589-11	ELECT	47MF 20% 10V	C218	1-163-021-00	CERAMIC CHIP 0.01MF	10V 50V
C165	1-124-472-11	ELECT	470MF 20% 10V	C219	1-124-589-11	ELECT 47MF	20% 16V
C166	1-124-472-11	ELECT	470MF 20% 10V	C220	1-163-021-00	CERAMIC CHIP 0.01MF	10V 50V
C167	1-124-472-11	ELECT	470MF 20% 10V	C221	1-124-589-11	ELECT 47MF	20% 10V
C168	1-124-472-11	ELECT	470MF 20% 10V	C222	1-126-157-11	ELECT 10MF	20% 10V
C169	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C223	1-163-021-00	CERAMIC CHIP 0.01MF	10V 50V
C170	1-126-160-11	ELECT	1MF 20% 50V	C224	1-124-589-11	ELECT 47MF	20% 10V
C171	1-163-036-00	CERAMIC CHIP 0.068MF	50V	C225	1-126-157-11	ELECT 10MF	20% 10V
C172	1-126-160-11	ELECT	1MF 20% 50V	C226	1-163-021-00	CERAMIC CHIP 0.01MF	10V 50V
C173	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C227	1-124-589-11	ELECT 47MF	20% 10V
C174	1-124-485-00	ELECT	0.47MF 20% 50V	C228	1-126-157-11	ELECT 10MF	20% 10V
C175	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C229	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C176	1-126-157-11	ELECT 10MF	20% 10V	C230	1-126-157-11	ELECT 10MF	20% 10V
C177	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C231	1-126-157-11	ELECT 10MF	20% 10V
C178	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	C244	1-124-589-11	ELECT 47MF	20% 10V
C179	1-126-157-11	ELECT 10MF	20% 10V	C245	1-126-160-11	ELECT 1MF	20% 50V
C180	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C246	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C181	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V	C247	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C182	1-163-134-00	CERAMIC CHIP 510PF	5% 50V	C248	1-163-081-00	CERAMIC CHIP 0.22MF	25V
C183	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C249	1-126-160-11	ELECT 1MF	20% 50V
C184	1-163-134-00	CERAMIC CHIP 510PF	5% 50V	C250	1-163-119-00	CERAMIC CHIP 120PF	10% 50V
C185	1-126-157-11	ELECT 10MF	20% 10V	C251	1-124-465-00	ELECT 0.47MF	20% 50V
C186	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	C252	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C187	1-130-481-00	MYLAR	0.0068MF 5% 50V	C253	1-126-160-11	ELECT 1MF	20% 50V
C188	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C254	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C189	1-130-479-00	MYLAR	0.0047MF 5% 50V	C257	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C190	1-126-157-11	ELECT 10MF	20% 10V	C259	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C192	1-126-157-11	ELECT 10MF	20% 10V	C260	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C193	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C261	1-163-121-00	CERAMIC CHIP 180PF	5% 50V
C194	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C262	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C195	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C263	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C196	1-124-589-11	ELECT 47MF	20% 10V	C264	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C197	1-124-584-00	ELECT 100MF	20% 10V	C265	1-163-121-00	CERAMIC CHIP 150PF	5% 50V
C198	1-124-584-00	ELECT 100MF	20% 10V	C266	1-126-157-11	ELECT 10MF	20% 10V
C199	1-124-584-00	ELECT 100MF	20% 10V	C268	1-126-157-11	ELECT 10MF	20% 10V
C200	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C270	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C201	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C271	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C202	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C272	1-163-125-00	CERAMIC CHIP 220PF	5% 50V
C203	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C273	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C204	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C274	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C205	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C501	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C206	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C502	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C207	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C503	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C208	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C504	1-163-021-00	CERAMIC CHIP 0.01MF	50V

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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C505	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C563	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C506	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C564	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C507	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C565	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C508	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C566	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C509	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C567	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C510	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C568	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C511	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C569	1-163-115-00	CERAMIC CHIP 82PF	5% 50V
C512	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C570	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C513	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C571	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C514	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C574	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C515	1-163-021-00	CERAMIC CHIP 0.01MF	50V	C576	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C516	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C517	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C518	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C519	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C520	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C521	1-126-157-11	ELECT 10MF	20% 10V				
C522	1-126-157-11	ELECT 10MF	20% 10V				
C523	1-126-094-11	ELECT 4.7MF	20% 16V				
C524	1-126-094-11	ELECT 4.7MF	20% 16V				
C526	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C527	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C528	1-126-094-11	ELECT 4.7MF	20% 16V				
C529	1-126-094-11	ELECT 4.7MF	20% 16V				
C530	1-126-442-11	DOUBLE LAYERS 0.022F	5.5V				
C531	1-126-094-11	ELECT 4.7MF	20% 16V				
C532	1-126-094-11	ELECT 4.7MF	20% 16V				
C533	1-126-094-11	ELECT 4.7MF	20% 16V				
C536	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V				
C537	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V				
C538	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C539	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C540	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C541	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C542	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C543	1-126-094-11	ELECT 4.7MF	20% 16V				
C544	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C547	1-124-584-00	ELECT 100MF	20% 10V				
C548	1-124-584-00	ELECT 100MF	20% 10V				
C549	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C550	1-163-038-00	CERAMIC CHIP 0.1MF	25V				
C551	1-163-038-00	CERAMIC CHIP 0.1MF	25V				
C552	1-163-038-00	CERAMIC CHIP 0.1MF	25V				
C553	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C554	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C555	1-126-160-11	ELECT 1MF	20% 50V				
C556	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C557	1-163-101-00	CERAMIC CHIP 22PF	5% 50V				
C558	1-126-157-11	ELECT 10MF	20% 10V				
C559	1-163-021-00	CERAMIC CHIP 0.01MF	50V				
C560	1-163-108-00	CERAMIC CHIP 4.3P	5% 50V				
C561	1-126-094-11	ELECT 4.7MF	20% 16V				
C562	1-126-094-11	ELECT 4.7MF	20% 16V				

CONNECTOR

CN001	*1-564-683-41	PIN, CONNECTOR 13P
CN002	*1-564-683-31	PIN, CONNECTOR 13P
CN003	*1-564-009-11	PIN, CONNECTOR 10P
CN004	*1-564-009-21	PIN, CONNECTOR 10P
CN006	1-506-485-11	PIN, CONNECTOR 6P
CN007	1-506-485-11	PIN, CONNECTOR 6P
CN009	1-506-483-21	PIN, CONNECTOR 4P
CN009	1-565-210-11	CONNECTOR, PPC (ZIF) 30P
CN018	*1-564-022-11	PIN, CONNECTOR 12P
CN019	1-506-470-11	PIN, CONNECTOR 5P
CN501	*1-564-020-41	PIN, CONNECTOR 10P
CN502	*1-564-021-41	PIN, CONNECTOR 11P
CN503	*1-564-020-31	PIN, CONNECTOR 10P
CN504	*1-564-021-31	PIN, CONNECTOR 11P

TRIMMER

CV001	1-141-245-00	TRIMMER, CERAMIC
CV002	1-141-245-00	TRIMMER, CERAMIC
CV501	1-141-304-21	TRIMMER, CERAMIC

DIODE

D502	8-719-908-06	DIODE ERA81-005
D503	8-719-105-64	DIODE RD4.3M-82

DELAY LINE

DL001	1-415-201-00	DELAY LINE
DL002	1-415-251-00	DELAY LINE
DL003	1-415-313-00	DELAY LINE (1H)

IC

IC001	8-759-011-64	IC MC74HC4052F
IC002	8-759-011-64	IC MC74HC4052F
IC003	8-759-011-64	IC MC74HC4052F
IC004	8-759-631-91	IC MS0552-122FP
IC005	8-759-630-81	IC MS0455-079FP
IC006	8-759-630-81	IC MS0455-079FP
IC007	8-759-106-81	IC UP074HC123AG
IC008	8-759-710-07	IC NJM2234N
IC009	8-759-710-62	IC NJM2246N
IC010	8-759-204-96	IC TC74HC04F

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
IC011	8-759-710-63	IC NJM2229M		IC528	8-759-710-07	IC NJM2234M	
IC012	8-759-011-65	IC MC74HC4053F		COLL			
IC013	8-759-603-54	IC M51271FP		L001	1-408-948-00	INDUCTOR	220UH
IC014	8-759-710-63	IC NJM2229M		L002	1-408-948-00	INDUCTOR	220UH
IC015	8-759-603-56	IC M51272FP		L003	1-408-948-00	INDUCTOR	220UH
IC016	8-759-106-81	IC UP074HC123AG		L004	1-408-948-00	INDUCTOR	220UH
IC017	8-759-605-38	IC M51279SP		L005	1-408-984-21	INDUCTOR	150UH
IC018	8-759-701-95	IC NJM2217L		L006	1-408-984-21	INDUCTOR	150UH
IC019	8-759-011-65	IC MC74HC4053F		L007	1-408-978-21	INDUCTOR	47UH
IC020	8-759-007-69	IC MC74HC157F		L008	1-408-980-21	INDUCTOR	68UH
IC021	8-759-710-09	IC NJM2233AM		L009	1-408-981-21	INDUCTOR	82UH
IC022	8-759-710-07	IC NJM2234M		L010	1-408-978-21	INDUCTOR	47UH
IC023	8-759-710-63	IC NJM2229M		L011	1-408-970-21	INDUCTOR	10UH
IC024	8-759-011-64	IC MC74HC4052F		L012	1-408-972-21	INDUCTOR	15UH
IC025	8-759-204-96	IC TC74HC04F		L013	1-408-972-21	INDUCTOR	15UH
IC026	8-759-710-07	IC NJM2234M		L014	1-408-972-21	INDUCTOR	15UH
IC027	8-759-011-64	IC MC74HC4052F		L015	1-408-969-21	INDUCTOR	8.2UH
IC028	8-759-106-81	IC UP074HC123AG		L017	1-408-948-00	INDUCTOR	220UH
IC030	8-759-710-09	IC NJM2233AM		L501	1-407-169-XX	INDUCTOR	100UH
IC031	8-759-204-96	IC TC74HC04F		L502	1-407-169-XX	INDUCTOR	100UH
IC032	8-759-106-63	IC UP074HC2G		L503	1-407-169-XX	INDUCTOR	100UH
IC033	8-759-201-47	IC TA7357AP		L504	1-408-978-21	INDUCTOR	47UH
IC034	8-759-106-81	IC UP074HC123AG		L505	1-407-169-XX	INDUCTOR	100UH
IC035	8-759-710-07	IC NJM2234M		L506	1-407-169-XX	INDUCTOR	100UH
IC037	8-759-011-65	IC MC74HC4053F		L507	1-407-169-XX	INDUCTOR	100UH
IC038	8-759-106-81	IC UP074HC123AG		L508	1-408-979-21	INDUCTOR	56UH
IC501	8-759-320-29	IC HD6380520-A28F		L510	1-408-972-21	INDUCTOR	15UH
IC502	8-759-144-19	IC UP075108G-E34-1B		L511	1-408-972-21	INDUCTOR	15UH
IC503	8-759-144-20	IC UP075108G-E35-1B		L809	1-408-979-21	INDUCTOR	56UH
IC504	8-752-330-54	IC CXS5864BH-12L		IC LINK			
IC505	8-752-323-65	IC CXK38256-101M		PS003A, 1-532-832-21 LINK, IC 0.2A			
IC506	8-752-323-65	IC CXK5816M-15L		TRANSISTOR			
IC507	8-759-107-01	IC UP074HC24AGS		Q001	8-729-100-66	TRANSISTOR	2SC1623
IC508	8-759-107-12	IC UP074HC37AGS		Q002	8-729-100-66	TRANSISTOR	2SC1623
IC509	8-759-106-85	IC UP074HC138G		Q003	8-729-100-66	TRANSISTOR	2SC1623
IC510	8-759-204-96	IC TC74HC04F		Q004	8-729-100-66	TRANSISTOR	2SC1623
IC511	8-759-204-94	IC TC74HC00F		Q005	8-729-100-66	TRANSISTOR	2SC1623
IC512	8-759-106-74	IC UP074HC32G		Q006	8-729-320-17	TRANSISTOR	2SA1122CD
IC513	8-759-106-82	IC UP074HC125G		Q007	8-729-320-17	TRANSISTOR	2SA1122CD
IC514	8-759-106-74	IC UP074HC32G		Q008	8-729-100-66	TRANSISTOR	2SC1623
IC515	8-759-107-12	IC UP074HC37AGS		Q009	8-729-100-66	TRANSISTOR	2SC1623
IC516	8-759-106-66	IC UP074HC08G		Q010	8-729-100-66	TRANSISTOR	2SC1623
IC517	8-759-106-74	IC UP074HC32G		Q011	8-729-100-66	TRANSISTOR	2SC1623
IC518	8-759-107-02	IC UP074HC24AGS		Q012	8-729-320-17	TRANSISTOR	2SA1122CD
IC519	8-759-107-01	IC UP074HC37AGS		Q013	8-729-320-17	TRANSISTOR	2SA1122CD
IC520	8-759-107-01	IC UP074HC24AGS		Q014	8-729-320-17	TRANSISTOR	2SA1122CD
IC521	8-757-930-11	IC CX-7930A		Q015	8-729-100-66	TRANSISTOR	2SC1623
IC522	8-759-106-74	IC UP074HC32G		Q016	8-729-100-66	TRANSISTOR	2SC1623
IC523	8-759-011-64	IC MC74HC4052F		Q017	8-729-100-66	TRANSISTOR	2SC1623
IC524	8-759-937-56	IC S-8054ALB-LM-S					
IC525	8-759-106-82	IC UP074HC125G					
IC526	8-759-905-24	IC SW7AL5624M					
IC527	8-759-205-06	IC TC74HC74F					

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q018	8-729-100-66	TRANSISTOR 2SC1623		Q073	8-729-117-54	TRANSISTOR 2SA1175	
Q019	8-729-320-17	TRANSISTOR 2SA1122CD		Q074	8-729-117-54	TRANSISTOR 2SA1175	
Q020	8-729-100-66	TRANSISTOR 2SC1623		Q075	8-729-117-54	TRANSISTOR 2SA1175	
Q021	8-729-100-66	TRANSISTOR 2SC1623		Q076	8-729-320-17	TRANSISTOR 2SA1122CD	
Q022	8-729-100-66	TRANSISTOR 2SC1623		Q079	8-729-320-17	TRANSISTOR 2SA1122CD	
Q023	8-729-100-66	TRANSISTOR 2SC1623		Q144	8-729-901-01	TRANSISTOR DTC144EK	
Q024	8-729-100-66	TRANSISTOR 2SC1623		Q145	8-729-901-01	TRANSISTOR DTC144EK	
Q025	8-729-100-66	TRANSISTOR 2SC1623		Q501	8-729-100-66	TRANSISTOR 2SC1623	
Q026	8-729-100-66	TRANSISTOR 2SC1623		Q502	8-729-901-00	TRANSISTOR DTC124EK	
Q027	8-729-100-66	TRANSISTOR 2SC1623		Q503	8-729-901-00	TRANSISTOR DTC124EK	
Q028	8-729-320-17	TRANSISTOR 2SA1122CD		Q504	8-729-901-00	TRANSISTOR DTC124EK	
Q029	8-729-100-66	TRANSISTOR 2SC1623		Q505	8-729-100-76	TRANSISTOR 2SA812	
Q030	8-729-100-66	TRANSISTOR 2SC1623		Q506	8-729-100-66	TRANSISTOR 2SC1623	
Q031	8-729-901-05	TRANSISTOR DTA124EK		Q507	8-729-901-01	TRANSISTOR DTC144EK	
Q032	8-729-100-66	TRANSISTOR 2SC1623		Q508	8-729-901-01	TRANSISTOR DTC144EK	
Q033	8-729-100-66	TRANSISTOR 2SC1623		Q509	8-729-901-01	TRANSISTOR DTC144EK	
Q034	8-729-100-66	TRANSISTOR 2SC1623		Q510	8-729-901-01	TRANSISTOR DTC144EK	
Q035	8-729-100-66	TRANSISTOR 2SC1623		RESISTOR			
Q036	8-729-320-17	TRANSISTOR 2SA1122CD		R001	1-216-089-00	METAL GLAZE 47K 5%	1/10W
Q037	8-729-320-17	TRANSISTOR 2SA1122CD		R002	1-216-077-00	METAL GLAZE 15K 5%	1/10W
Q038	8-729-100-66	TRANSISTOR 2SC1623		R003	1-216-748-11	METAL GLAZE 39K 5%	1/10W
Q039	8-729-100-66	TRANSISTOR 2SC1623		R004	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q040	8-729-100-66	TRANSISTOR 2SC1623		R005	1-216-089-00	METAL GLAZE 47K 5%	1/10W
Q041	8-729-100-66	TRANSISTOR 2SC1623		R006	1-216-748-11	METAL GLAZE 39K 5%	1/10W
Q042	8-729-100-66	TRANSISTOR 2SC1623		R007	1-216-081-00	METAL GLAZE 22K 5%	1/10W
Q043	8-729-100-66	TRANSISTOR 2SC1623		R008	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q044	8-729-100-66	TRANSISTOR 2SC1623		R009	1-216-045-00	METAL GLAZE 680 5%	1/10W
Q045	8-729-100-66	TRANSISTOR 2SC1623		R010	1-216-748-11	METAL GLAZE 39K 5%	1/10W
Q046	8-729-100-66	TRANSISTOR 2SC1623		R011	1-216-077-00	METAL GLAZE 15K 5%	1/10W
Q047	8-729-320-17	TRANSISTOR 2SA1122CD		R012	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q048	8-729-320-17	TRANSISTOR 2SA1122CD		R013	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q049	8-729-320-17	TRANSISTOR 2SA1122CD		R014	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
Q050	8-729-320-17	TRANSISTOR 2SA1122CD		R015	1-216-037-00	METAL GLAZE 330 5%	1/10W
Q051	8-729-320-17	TRANSISTOR 2SA1122CD		R016	1-216-089-00	METAL GLAZE 47K 5%	1/10W
Q052	8-729-100-66	TRANSISTOR 2SC1623		R017	1-216-071-00	METAL GLAZE 6.2K 5%	1/10W
Q053	8-729-100-66	TRANSISTOR 2SC1623		R018	1-216-073-00	METAL GLAZE 10K 5%	1/10W
Q054	8-729-320-17	TRANSISTOR 2SA1122CD		R019	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q055	8-729-320-17	TRANSISTOR 2SA1122CD		R020	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q056	8-729-320-17	TRANSISTOR 2SA1122CD		R021	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q057	8-729-320-17	TRANSISTOR 2SA1122CD		R022	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q058	8-729-320-17	TRANSISTOR 2SA1122CD		R023	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q059	8-729-901-00	TRANSISTOR DTC124EK		R024	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W
Q060	8-729-100-66	TRANSISTOR 2SC1623		R025	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
Q061	8-729-100-66	TRANSISTOR 2SC1623		R026	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q062	8-729-100-66	TRANSISTOR 2SC1623		R027	1-216-077-00	METAL GLAZE 15K 5%	1/10W
Q063	8-729-100-66	TRANSISTOR 2SC1623		R028	1-216-748-11	METAL GLAZE 39K 5%	1/10W
Q064	8-729-100-66	TRANSISTOR 2SC1623		R029	1-216-077-00	METAL GLAZE 15K 5%	1/10W
Q065	8-729-100-66	TRANSISTOR 2SC1623		R030	1-216-748-11	METAL GLAZE 39K 5%	1/10W
Q066	8-729-100-66	TRANSISTOR 2SC1623		R031	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q067	8-729-320-17	TRANSISTOR 2SA1122CD		R032	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
Q068	8-729-901-05	TRANSISTOR DTA124EK		R033	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
Q069	8-729-901-00	TRANSISTOR DTC124EK		R034	1-216-077-00	METAL GLAZE 15K 5%	1/10W
Q070	8-729-901-05	TRANSISTOR DTA124EK					
Q071	8-729-901-00	TRANSISTOR DTC124EK					
Q072	8-729-117-54	TRANSISTOR 2SA1175					

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R035	1-216-748-11	METAL GLAZE	39K 5% 1/10W	R091	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R036	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R092	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R037	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R093	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R038	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R094	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R039	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R095	1-216-047-00	METAL GLAZE	820 5% 1/10W
R040	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R096	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R041	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R097	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R042	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R098	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R043	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R099	1-216-295-00	METAL GLAZE	0 5% 1/10W
R044	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R100	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R045	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R101	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R046	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R102	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R047	1-216-021-00	METAL GLAZE	68 5% 1/10W	R103	1-216-295-00	METAL GLAZE	0 5% 1/10W
R048	1-216-025-00	METAL GLAZE	100 5% 1/10W	R104	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R049	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R105	1-216-295-00	METAL GLAZE	0 5% 1/10W
R050	1-216-089-00	METAL GLAZE	47K 5% 1/10W	R106	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R051	1-216-033-00	METAL GLAZE	220 5% 1/10W	R107	1-216-056-00	METAL GLAZE	2K 5% 1/10W
R052	1-216-025-00	METAL GLAZE	100 5% 1/10W	R108	1-216-056-00	METAL GLAZE	2K 5% 1/10W
R053	1-216-025-00	METAL GLAZE	100 5% 1/10W	R109	1-216-025-00	METAL GLAZE	100 5% 1/10W
R054	1-216-039-00	METAL GLAZE	390 5% 1/10W	R110	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R055	1-216-045-00	METAL GLAZE	680 5% 1/10W	R111	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R058	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R112	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R059	1-216-295-00	METAL GLAZE	0 5% 1/10W	R113	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R061	1-216-748-11	METAL GLAZE	39K 5% 1/10W	R114	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R062	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R115	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R063	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R116	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R064	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R117	1-216-041-00	METAL GLAZE	470 5% 1/10W
R065	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R118	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R066	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R119	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R067	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R120	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R068	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R121	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R069	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R122	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R070	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R123	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R071	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R124	1-216-081-00	METAL GLAZE	22K 5% 1/10W
R072	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R125	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R073	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R126	1-216-047-00	METAL GLAZE	820 5% 1/10W
R074	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R127	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R075	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R128	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R076	1-216-097-00	METAL GLAZE	100K 5% 1/10W	R129	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R077	1-216-047-00	METAL GLAZE	820 5% 1/10W	R130	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R078	1-216-079-00	METAL GLAZE	18K 5% 1/10W	R131	1-216-043-00	METAL GLAZE	560 5% 1/10W
R079	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R132	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R080	1-216-068-00	METAL GLAZE	4.7K 5% 1/10W	R133	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R081	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R134	1-216-047-00	METAL GLAZE	820 5% 1/10W
R082	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R135	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R083	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R136	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R084	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R137	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R085	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R138	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W
R086	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R139	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R087	1-216-037-00	METAL GLAZE	330 5% 1/10W	R140	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R088	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R141	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R089	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R142	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R090	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R143	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W

When indicating parts by reference number, please include the board name.

Eff. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
R148	1-216-295-00	METAL GLAZE	0 5% 1/10W	R205	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R150	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R206	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R151	1-216-748-11	METAL GLAZE	39K 5% 1/10W	R207	1-216-039-00	METAL GLAZE	390 5% 1/10W
R152	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R208	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W
R153	1-216-295-00	METAL GLAZE	0 5% 1/10W	R209	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R155	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R210	1-216-099-00	METAL GLAZE	120K 5% 1/10W
R156	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R211	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R157	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R212	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R158	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R213	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R159	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R214	1-216-041-00	METAL GLAZE	470 5% 1/10W
R160	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R215	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R161	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R216	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R162	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R217	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R163	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W	R218	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R164	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R219	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R165	1-216-047-00	METAL GLAZE	820 5% 1/10W	R220	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R166	1-216-058-00	METAL GLAZE	2.4K 5% 1/10W	R221	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R167	1-216-083-00	METAL GLAZE	27K 5% 1/10W	R222	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R168	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R223	1-216-095-00	METAL GLAZE	0 5% 1/10W
R169	1-216-043-00	METAL GLAZE	560 5% 1/10W	R224	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R170	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R225	1-216-041-00	METAL GLAZE	470 5% 1/10W
R171	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R226	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R173	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R227	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R174	1-216-121-00	METAL GLAZE	10K 5% 1/10W	R228	1-216-071-00	METAL GLAZE	8.2K 5% 1/10W
R175	1-216-097-00	METAL GLAZE	100 5% 1/10W	R229	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R176	1-216-043-00	METAL GLAZE	560 5% 1/10W	R230	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R177	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R231	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R178	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R232	1-216-067-00	METAL GLAZE	5.6K 5% 1/10W
R179	1-216-065-00	METAL GLAZE	4.7K 5% 1/10W	R233	1-216-061-00	METAL GLAZE	3.3K 5% 1/10W
R180	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R234	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R181	1-216-059-00	METAL GLAZE	2.7K 5% 1/10W	R235	1-216-073-00	METAL GLAZE	10K 5% 1/10W
R182	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R236	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R183	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R237	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R184	1-216-077-00	METAL GLAZE	15K 5% 1/10W	R238	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R185	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R239	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R186	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R240	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R187	1-216-081-00	METAL GLAZE	22K 5% 1/10W	R241	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R188	1-216-049-00	METAL GLAZE	1K 5% 1/10W	R242	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R189	1-216-113-00	METAL GLAZE	470K 5% 1/10W	R243	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R190	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R244	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R191	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R245	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R192	1-216-021-00	METAL GLAZE	68 5% 1/10W	R246	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R193	1-216-025-00	METAL GLAZE	100 5% 1/10W	R247	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R194	1-216-295-00	METAL GLAZE	0 5% 1/10W	R248	1-216-085-00	METAL GLAZE	33K 5% 1/10W
R196	1-216-748-11	METAL GLAZE	39K 5% 1/10W	R249	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R197	1-216-057-00	METAL GLAZE	2.2K 5% 1/10W	R250	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R198	1-216-099-00	METAL GLAZE	120K 5% 1/10W	R251	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R199	1-216-039-00	METAL GLAZE	390 5% 1/10W	R252	1-216-748-11	METAL GLAZE	39K 5% 1/10W
R200	1-216-053-00	METAL GLAZE	1.5K 5% 1/10W	R253	1-216-077-00	METAL GLAZE	15K 5% 1/10W
R201	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R254	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R202	1-216-095-00	METAL GLAZE	120K 5% 1/10W	R255	1-216-051-00	METAL GLAZE	1.2K 5% 1/10W
R203	1-216-073-00	METAL GLAZE	10K 5% 1/10W	R256	1-216-058-00	METAL GLAZE	2.4K 5% 1/10W
R204	1-216-085-00	METAL GLAZE	33K 5% 1/10W	R257	1-216-049-00	METAL GLAZE	1K 5% 1/10W

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
R258	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R331	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R259	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R332	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R260	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R333	1-216-047-00	METAL GLAZE 820 5%	1/10W
R261	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R334	1-216-061-00	METAL GLAZE 1.3K 5%	1/10W
R262	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R335	1-216-058-00	METAL GLAZE 2.4K 5%	1/10W
R263	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R336	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R264	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R337	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R265	1-249-411-11	CARBON 330 5%	1/4W	R338	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R266	1-216-748-11	METAL GLAZE 39K 5%	1/10W	R339	1-216-083-00	METAL GLAZE 2.7K 5%	1/10W
R267	1-216-077-00	METAL GLAZE 15K 5%	1/10W	R340	1-216-025-00	METAL GLAZE 100 5%	1/10W
R268	1-249-411-11	CARBON 330 5%	1/4W	R341	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R269	1-216-748-11	METAL GLAZE 39K 5%	1/10W	R342	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R270	1-216-077-00	METAL GLAZE 15K 5%	1/10W	R501	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R271	1-249-411-11	CARBON 330 5%	1/4W	R502	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R272	1-216-748-11	METAL GLAZE 39K 5%	1/10W	R503	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R273	1-216-077-00	METAL GLAZE 15K 5%	1/10W	R504	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R274	1-249-411-11	CARBON 330 5%	1/4W	R506	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R275	1-216-748-11	METAL GLAZE 39K 5%	1/10W	R507	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R276	1-216-077-00	METAL GLAZE 15K 5%	1/10W	R508	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R277	1-216-021-00	METAL GLAZE 68 5%	1/10W	R509	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R278	1-216-021-00	METAL GLAZE 68 5%	1/10W	R510	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R279	1-216-021-00	METAL GLAZE 68 5%	1/10W	R511	1-216-039-00	METAL GLAZE 390 5%	1/10W
R280	1-216-021-00	METAL GLAZE 68 5%	1/10W	R512	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R281	1-216-021-00	METAL GLAZE 68 5%	1/10W	R513	1-216-019-00	METAL GLAZE 55 5%	1/10W
R282	1-216-039-00	METAL GLAZE 390 5%	1/10W	R514	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R283	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W	R516	1-216-056-00	METAL GLAZE 2K 5%	1/10W
R284	1-216-073-00	METAL GLAZE 10K 5%	1/10W	R517	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R285	1-216-099-00	METAL GLAZE 120K 5%	1/10W	R518	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R286	1-216-073-00	METAL GLAZE 10K 5%	1/10W	R519	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R287	1-216-085-00	METAL GLAZE 33K 5%	1/10W	R524	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R288	1-216-073-00	METAL GLAZE 10K 5%	1/10W	R525	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R289	1-216-073-00	METAL GLAZE 10K 5%	1/10W	R526	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R290	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R527	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R291	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W	R528	1-216-025-00	METAL GLAZE 100 5%	1/10W
R292	1-216-099-00	METAL GLAZE 120K 5%	1/10W	R529	1-216-025-00	METAL GLAZE 100 5%	1/10W
R293	1-216-113-00	METAL GLAZE 470K 5%	1/10W	R530	1-216-025-00	METAL GLAZE 100 5%	1/10W
R294	1-216-075-00	METAL GLAZE 12K 5%	1/10W	R531	1-216-025-00	METAL GLAZE 100 5%	1/10W
R295	1-216-073-00	METAL GLAZE 10K 5%	1/10W	R532	1-216-025-00	METAL GLAZE 100 5%	1/10W
R296	1-216-095-00	METAL GLAZE 82K 5%	1/10W	R533	1-216-025-00	METAL GLAZE 100 5%	1/10W
R297	1-216-695-11	METAL CHIP 68K 0.50K 1/10W		R534	1-216-025-00	METAL GLAZE 100 5%	1/10W
R298	1-216-691-11	METAL CHIP 47K 0.50K 1/10W		R535	1-216-025-00	METAL GLAZE 100 5%	1/10W
R299	1-216-085-00	METAL GLAZE 47K 5%	1/10W	R537	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R300	1-216-091-00	METAL GLAZE 56K 5%	1/10W	R538	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R302	1-216-089-00	METAL GLAZE 47K 5%	1/10W	R539	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R303	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	R540	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R304	1-216-041-00	METAL GLAZE 470 5%	1/10W	R541	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R305	1-216-045-00	METAL GLAZE 680 5%	1/10W	R542	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R322	1-216-075-00	METAL GLAZE 12K 5%	1/10W	R543	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R324	1-216-295-00	METAL GLAZE 0 5%	1/10W	R544	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R325	1-216-295-00	METAL GLAZE 0 5%	1/10W	R545	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R327	1-216-295-00	METAL GLAZE 0 5%	1/10W	R546	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R329	1-216-049-00	METAL GLAZE 1K 5%	1/10W	R547	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R330	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W	R548	1-216-089-00	METAL GLAZE 47K 5%	1/10W
				R549	1-216-089-00	METAL GLAZE 47K 5%	1/10W

When indicating parts by reference number, please include the board name.

Part No.	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
3550	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R606	1-216-025-00 METAL GLAZE	100 5% 1/10W
3551	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R607	1-216-025-00 METAL GLAZE	100 5% 1/10W
3552	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R608	1-216-025-00 METAL GLAZE	100 5% 1/10W
3553	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R609	1-216-025-00 METAL GLAZE	100 5% 1/10W
3554	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R610	1-216-025-00 METAL GLAZE	100 5% 1/10W
3555	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R611	1-216-025-00 METAL GLAZE	100 5% 1/10W
3556	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R612	1-216-025-00 METAL GLAZE	100 5% 1/10W
3557	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R613	1-216-025-00 METAL GLAZE	100 5% 1/10W
3558	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R614	1-216-025-00 METAL GLAZE	100 5% 1/10W
3559	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R615	1-216-025-00 METAL GLAZE	100 5% 1/10W
3560	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R616	1-216-121-00 METAL GLAZE	1M 5% 1/10W
3561	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R617	1-216-063-00 METAL GLAZE	3.9K 5% 1/10W
3562	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R618	1-216-065-00 METAL GLAZE	4.7K 5% 1/10W
3563	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R619	1-216-051-00 METAL GLAZE	1.2K 5% 1/10W
3567	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	R620	1-216-065-00 METAL GLAZE	4.7K 5% 1/10W
3568	1-216-097-00	METAL GLAZE	100K 5%	1/10W	R621	1-216-051-00 METAL GLAZE	1.2K 5% 1/10W
3569	1-216-097-00	METAL GLAZE	100K 5%	1/10W	R622	1-216-695-11 METAL CHIP	4.3K 0.50% 1/10W
3570	1-216-097-00	METAL GLAZE	100K 5%	1/10W	R623	1-216-045-00 METAL GLAZE	680 5% 1/10W
3571	1-216-097-00	METAL GLAZE	100K 5%	1/10W	R624	1-216-063-00 METAL GLAZE	3.9K 5% 1/10W
3572	1-216-097-00	METAL GLAZE	100K 5%	1/10W			
3573	1-216-097-00	METAL GLAZE	100K 5%	1/10W		VARIABLE RESISTOR	
3574	1-216-097-00	METAL GLAZE	100K 5%	1/10W	RV001	1-230-521-11 RES, ADJ, METAL GLAZE	2.2K
3575	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	RV003	1-230-526-11 RES, ADJ, METAL GLAZE	47K
3576	1-216-097-00	METAL GLAZE	100K 5%	1/10W	RV004	1-230-526-11 RES, ADJ, METAL GLAZE	47K
3577	1-216-097-00	METAL GLAZE	100K 5%	1/10W	RV005	1-230-523-11 RES, ADJ, METAL GLAZE	10K
3578	1-216-097-00	METAL GLAZE	100K 5%	1/10W	RV007	1-230-523-11 RES, ADJ, METAL GLAZE	10K
3579	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	RV008	1-230-523-11 RES, ADJ, METAL GLAZE	10K
3580	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	RV009	1-230-523-11 RES, ADJ, METAL GLAZE	10K
3581	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	RV010	1-230-523-11 RES, ADJ, METAL GLAZE	10K
3582	1-216-073-00	METAL GLAZE	10K 5%	1/10W	RV011	1-230-526-11 RES, ADJ, METAL GLAZE	47K
3583	1-216-073-00	METAL GLAZE	10K 5%	1/10W	RV012	1-230-520-11 RES, ADJ, METAL GLAZE	1K
3584	1-216-073-00	METAL GLAZE	10K 5%	1/10W	RV013	1-230-526-11 RES, ADJ, METAL GLAZE	47K
3585	1-216-073-00	METAL GLAZE	10K 5%	1/10W	RV014	1-230-526-11 RES, ADJ, METAL GLAZE	220K
3586	1-216-057-00	METAL GLAZE	2.2K 5%	1/10W	RV015	1-230-528-11 RES, ADJ, METAL GLAZE	220K
3587	1-216-057-00	METAL GLAZE	2.2K 5%	1/10W	RV016	1-230-526-11 RES, ADJ, METAL GLAZE	47K
3588	1-216-097-00	METAL GLAZE	100K 5%	1/10W		TRANSFORMER	
3589	1-216-121-00	METAL GLAZE	1M 5%	1/10W	T001	1-236-359-11 LFP	
3590	1-216-081-00	METAL GLAZE	22K 5%	1/10W	T002	1-235-437-11 BPF, PB C	
3591	1-216-077-00	METAL GLAZE	15K 5%	1/10W	T003	1-235-437-11 BPF, PB C	
3592	1-216-077-00	METAL GLAZE	15K 5%	1/10W	T004	1-236-359-11 LFP	
3593	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	T005	1-425-928-00 TRANSFORMER, DELAY ADJUSTING	
3594	1-216-077-00	METAL GLAZE	15K 5%	1/10W		CRYSTAL	
3595	1-216-089-00	METAL GLAZE	4.7K 5%	1/10W	X001	1-567-344-21 VIBRATOR, CRYSTAL (VCO)	
3596	1-216-025-00	METAL GLAZE	100 5%	1/10W	X002	1-567-344-21 VIBRATOR, CRYSTAL (VCO)	
3597	1-216-025-00	METAL GLAZE	100 5%	1/10W	X004	1-567-344-21 VIBRATOR, CRYSTAL (VCO)	
3598	1-216-025-00	METAL GLAZE	100 5%	1/10W	X005	1-567-344-21 VIBRATOR, CRYSTAL (VCO)	
3599	1-216-025-00	METAL GLAZE	100 5%	1/10W	X006	1-577-165-11 VIBRATOR, CERAMIC	
3600	1-216-025-00	METAL GLAZE	100 5%	1/10W	X008	1-577-165-11 VIBRATOR, CERAMIC	
3601	1-216-025-00	METAL GLAZE	100 5%	1/10W	X501	1-567-132-00 OSCILLATOR, CERAMIC	
3602	1-216-025-00	METAL GLAZE	100 5%	1/10W	X502	1-567-160-21 OSCILLATOR, CERAMIC	
3603	1-216-025-00	METAL GLAZE	100 5%	1/10W	X503	1-567-160-21 OSCILLATOR, CERAMIC	
3604	1-216-025-00	METAL GLAZE	100 5%	1/10W	X504	1-567-344-21 VIBRATOR, CRYSTAL (VCO)	
3605	1-216-025-00	METAL GLAZE	100 5%	1/10W			

When indicating parts by reference number, please include the board name.

DM-15P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7061-509-A DM-15 (P) BOARD, COMPLETE (Ref.No.6,000 ***** Series)							
<u>CAPACITOR</u>							
C401	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C459	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C402	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C460	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V
C403	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C462	1-163-012-00	CERAMIC CHIP 0.001MF	10% 50V
C404	1-163-105-00	CERAMIC CHIP 33PF	5% 50V	C463	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C405	1-124-589-11	ELECT 47MF	20% 10V	<u>CONNECTOR</u>			
C406	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	CN401	1-565-210-11	CONNECTOR, FPC (ZIF) 30P	
C407	1-124-257-00	ELECT 2.2MF	20% 50V	<u>DIODE</u>			
C408	1-126-160-11	ELECT 1MF	20% 50V	D401	8-719-100-05	DIODE 1S2837	
C409	1-126-160-11	ELECT 1MF	20% 50V	D402	8-719-801-41	DIODE 1S5196	
C410	1-124-589-11	ELECT 47MF	20% 10V	<u>IC</u>			
C411	1-126-160-11	ELECT 1MF	20% 50V	IC401	8-759-630-56	IC M65011FP-D	
C412	1-124-589-11	ELECT 47MF	20% 10V	IC402	8-759-630-77	IC M50747-651FP	
C413	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC403	8-752-032-55	IC CXA1958K	
C414	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	IC404	8-759-112-82	IC UPD8590C	
C415	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC405	8-759-205-06	IC TC74HC74F	
C416	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC406	8-759-605-15	IC MS94C800L	
C417	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	IC407	8-759-605-16	IC MS94C500L	
C418	1-126-157-11	ELECT 10MF	20% 10V	IC408	8-759-605-15	IC MS94C500L	
C419	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC409	8-759-605-15	IC MS94C500L	
C420	1-124-589-11	ELECT 47MF	20% 10V	IC410	8-759-007-69	IC MC74HC157F	
C421	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC411	8-759-007-69	IC MC74HC157F	
C422	1-163-125-00	CERAMIC CHIP 220PF	5% 50V	IC412	8-759-605-14	IC MS2579P	
C423	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC413	8-759-605-13	IC MS2579P	
C424	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC414	8-759-605-13	IC MS2579P	
C425	1-124-589-11	ELECT 47MF	20% 10V	IC415	1-808-110-11	IC HGA0901	
C426	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	IC416	8-759-011-65	IC MC74HC4053F	
C427	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	IC417	8-759-204-96	IC TC74HC04F	
C428	1-124-589-11	ELECT 47MF	20% 10V	<u>COIL</u>			
C429	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L403	1-408-976-21	INDUCTOR 33UH	
C430	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	L404	1-408-976-21	INDUCTOR 33UH	
C431	1-124-589-11	ELECT 47MF	20% 10V	<u>TRANSISTOR</u>			
C432	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	Q401	8-729-100-66	TRANSISTOR 2SC1623	
C433	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	Q402	8-729-100-66	TRANSISTOR 2SC1623	
C434	1-124-589-11	ELECT 47MF	20% 10V	Q403	8-729-901-01	TRANSISTOR DTC144EX	
C435	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	<u>RESISTOR</u>			
C436	1-124-589-11	ELECT 47MF	20% 10V	R401	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
C437	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R402	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
C438	1-124-589-11	ELECT 47MF	20% 10V	R403	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
C439	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R404	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
C440	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R405	1-216-032-00	METAL GLAZE 200 5% 1/10W	
C441	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R406	1-216-032-00	METAL GLAZE 200 5% 1/10W	
C442	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R407	1-216-047-00	METAL GLAZE 820 5% 1/10W	
C443	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R408	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
C444	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R409	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
C445	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V	R410	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
C446	1-124-589-11	ELECT 47MF	20% 10V	R413	1-216-025-00	METAL GLAZE 100 5% 1/10W	
C447	1-124-589-11	ELECT 47MF	20% 10V				
C448	1-124-589-11	ELECT 47MF	20% 10V				
C449	1-124-589-11	ELECT 47MF	20% 10V				
C450	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				
C451	1-124-589-11	ELECT 47MF	20% 10V				
C452	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				
C453	1-124-589-11	ELECT 47MF	20% 10V				
C454	1-126-157-11	ELECT 10MF	20% 10V				
C455	1-126-157-11	ELECT 10MF	20% 10V				
C456	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				
C457	1-124-589-11	ELECT 47MF	20% 10V				
C458	1-163-021-00	CERAMIC CHIP 0.01MF	10% 50V				

When indicating parts by reference number, please include the board name.

DM-15P

LD-1

MS-4

LS-9

HE-1

MJ-15

CC-11

TS-74

Ref. No.	Part No.	Description	Remark
R417	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R418	1-216-069-00	METAL GLAZE 350 5% 1/10W	
R419	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R420	1-216-033-00	METAL GLAZE 220 5% 1/10W	
R422	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R423	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R425	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R426	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R469	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R470	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
<u>CRYSTAL</u>			
X401	1-567-132-00	VIBRATOR, CERAMIC	
X402	1-567-718-11	OSCILLATOR, CRYSTAL	

*A-7070-024-A LD-1 BOARD, COMPLETE (Ref. No. 9,000 Series)			
<u>DIODE</u>			
D901	8-719-928-54	DIODE GL-450S	

*A-7090-029-A MS-4 BOARD, COMPLETE (Ref. No. 8,000 Series)			
<u>CAPACITOR</u>			
C901	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
<u>CONNECTOR</u>			
CN001	*1-554-671-31	PIN, CONNECTOR (HOOK TYPE)	

LS-9 BOARD (Ref. No. 4,100 Series)			
<u>CONNECTOR</u>			
CN001	*1-554-671-11	PIN, CONNECTOR (HOOK TYPE)	

*A-7070-613-A HE-1 BOARD, COMPLETE (Ref. No. 8,000 Series)			
<u>CAPACITOR</u>			
C201	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
C202	1-163-035-00	CERAMIC CHIP 0.047MF 50V	
<u>CONNECTOR</u>			
CN201	*1-506-468-11	PIN, CONNECTOR 3P	

Ref. No.	Part No.	Description	Remark
<u>JACK</u>			
J201	1-507-792-00	JACK (HEADPHONES)	

*A-7070-614-A MJ-15 BOARD, COMPLETE (Ref. No. 8,000 Series)			
<u>CAPACITOR</u>			
C301	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
<u>CONNECTOR</u>			
CH301	*1-506-468-11	PIN, CONNECTOR 3P	
<u>DIODE</u>			
D301	8-719-108-12	DIODE R09.15W	
<u>JACK</u>			
J301	1-507-995-21	JACK, MICROPHONE (MIC)	

*A-7070-620-A CC-11 BOARD, COMPLETE (Ref. No. 8,000 Series)			
3-697-998-01 PLATE, GROUND			
<u>CONNECTOR</u>			
CN102	1-566-770-11	SOCKET, CONNECTOR 8P (CONTROLLER)	
<u>COMPOSITION CIRCUIT BLOCK</u>			
CP101	1-232-128-11	COMPOSITION CIRCUIT BLOCK	

*A-7070-627-A TS-74 (RIGHT) BOARD, COMPLETE (Ref. No. 4,000 Series)			
<u>TRANSISTOR</u>			
Q715	8-729-700-08	NJL7141E	

*A-7070-628-A TS-74 (LEFT) BOARD, COMPLETE (Ref. No. 4,000 Series)			
<u>TRANSISTOR</u>			
Q715	8-729-700-08	NJL7141E	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
*A-7070-B15-A FB-2 (P) BOARD, COMPLETE (Ref.No. 8,000 ***** Series)				D021	8-719-941-46	DIODE GLSHY41 (LP: RP DECK)	
				D022	8-719-941-46	DIODE GLSHY41 (SP: RP DECK)	
				D023	8-719-812-31	DIODE TLR123 (AUDIO DUB)	
*3-689-521-01 HOLDER, LED, ROUND				D024	8-719-939-36	DIODE GLSHY42 (EJECT: RP DECK)	
*3-697-607-01 HOLDER (SU), LED				D025	8-719-941-46	DIODE GLSHY41 (J/S: RP DECK)	
				D026	8-719-812-31	DIODE TLR123 (REC: RP DECK)	
				D027	8-719-918-96	DIODE AA34225 (PAUSE: RP DECK)	
				D028	8-719-812-32	DIODE TLY123 (FF: RP DECK)	
				D029	8-719-920-05	DIODE SLP281C-50 (PLAY: RP DECK)	
				D030	8-719-812-32	DIODE TLY123 (REW: RP DECK)	
				D031	8-719-101-23	DIODE 1SS123	
				D032	8-719-101-23	DIODE 1SS123	
				D033	8-719-101-23	DIODE 1SS123	
				D034	8-719-101-23	DIODE 1SS123	
				D035	8-719-101-23	DIODE 1SS123	
				D037	8-719-101-23	DIODE 1SS123	
				D038	8-719-101-23	DIODE 1SS123	
				D039	8-719-101-23	DIODE 1SS123	
				D040	8-719-101-23	DIODE 1SS123	
				D041	8-719-101-23	DIODE 1SS123	
				D042	8-719-101-23	DIODE 1SS123	
				D043	8-719-101-23	DIODE 1SS123	
				D044	8-719-101-23	DIODE 1SS123	
				D045	8-719-101-23	DIODE 1SS123	
				D046	8-719-101-23	DIODE 1SS123	
				<u>IC</u>			
				IC001	8-759-937-21	IC CXD1078M	
				IC002	8-759-937-21	IC CXD1078M	
				IC101	8-759-710-97	IC NJM4552M	
				IC102	8-759-745-64	IC NJM4560M	
				<u>COIL</u>			
				L001	1-410-393-11	INDUCTOR CHIP 100UH	
				<u>TRANSISTOR</u>			
				Q001	8-729-901-06	TRANSISTOR DTA144EX	
				Q002	8-729-901-06	TRANSISTOR DTA144EX	
				Q004	8-729-901-06	TRANSISTOR DTA144EX	
				Q101	8-729-202-38	TRANSISTOR 2SC3326N	
				Q102	8-729-100-75	TRANSISTOR 2SA812-M5	
				Q103	8-729-100-66	TRANSISTOR 2SC1623	
				Q104	8-729-100-66	TRANSISTOR 2SC1623	
				Q105	8-729-100-66	TRANSISTOR 2SC1623	
				Q106	8-729-100-75	TRANSISTOR 2SA812-M5	
				Q107	8-729-202-38	TRANSISTOR 2SC3326N	
				Q108	8-729-202-38	TRANSISTOR 2SC3326N	
				<u>RESISTOR</u>			
				R001	1-216-029-00	METAL GLAZE 150 5% 1/10W	
				R002	1-216-037-00	METAL GLAZE 330 5% 1/10W	
				R003	1-216-037-00	METAL GLAZE 330 5% 1/10W	
				R004	1-216-037-00	METAL GLAZE 330 5% 1/10W	

When indicating parts by reference number, please include the board name.

f.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
005	1-216-037-00	METAL GLAZE 330 5%	1/10W	R109	1-216-079-00	METAL GLAZE 18K 5%	1/10W
006	1-216-037-00	METAL GLAZE 330 5%	1/10W	R110	1-216-081-00	METAL GLAZE 22K 5%	1/10W
007	1-216-037-00	METAL GLAZE 330 5%	1/10W	R111	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
008	1-216-037-00	METAL GLAZE 330 5%	1/10W	R112	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
009	1-216-037-00	METAL GLAZE 330 5%	1/10W	R113	1-216-101-00	METAL GLAZE 150K 5%	1/10W
010	1-216-037-00	METAL GLAZE 330 5%	1/10W	R114	1-216-107-00	METAL GLAZE 270K 5%	1/10W
011	1-216-037-00	METAL GLAZE 330 5%	1/10W	R117	1-216-075-00	METAL GLAZE 12K 5%	1/10W
012	1-216-037-00	METAL GLAZE 330 5%	1/10W	R118	1-216-025-00	METAL GLAZE 100 5%	1/10W
013	1-216-037-00	METAL GLAZE 330 5%	1/10W	R120	1-216-075-00	METAL GLAZE 12K 5%	1/10W
014	1-216-037-00	METAL GLAZE 330 5%	1/10W	R121	1-216-025-00	METAL GLAZE 100 5%	1/10W
015	1-216-037-00	METAL GLAZE 330 5%	1/10W	R122	1-216-089-00	METAL GLAZE 47K 5%	1/10W
016	1-216-025-00	METAL GLAZE 100 5%	1/10W	R123	1-216-089-00	METAL GLAZE 6.8K 5%	1/10W
017	1-216-037-00	METAL GLAZE 330 5%	1/10W	R124	1-216-049-00	METAL GLAZE 1K 5%	1/10W
018	1-216-037-00	METAL GLAZE 330 5%	1/10W	R125	1-216-049-00	METAL GLAZE 1K 5%	1/10W
019	1-216-025-00	METAL GLAZE 100 5%	1/10W	R126	1-216-295-00	METAL GLAZE 0 5%	1/10W
020	1-216-037-00	METAL GLAZE 330 5%	1/10W	R128	1-216-295-00	METAL GLAZE 0 5%	1/10W
021	1-216-037-00	METAL GLAZE 330 5%	1/10W	R130	1-216-069-00	METAL GLAZE 10K 5%	1/10W
022	1-216-037-00	METAL GLAZE 330 5%	1/10W	R131	1-216-073-00	METAL GLAZE 10K 5%	1/10W
023	1-216-037-00	METAL GLAZE 330 5%	1/10W	R132	1-216-089-00	METAL GLAZE 47K 5%	1/10W
024	1-216-037-00	METAL GLAZE 330 5%	1/10W	R133	1-216-107-00	METAL GLAZE 270K 5%	1/10W
025	1-216-037-00	METAL GLAZE 330 5%	1/10W	R134	1-216-073-00	METAL GLAZE 10K 5%	1/10W
026	1-216-037-00	METAL GLAZE 330 5%	1/10W	R139	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
027	1-216-037-00	METAL GLAZE 330 5%	1/10W	R140	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
028	1-216-037-00	METAL GLAZE 330 5%	1/10W	VARIABLE RESISTOR			
029	1-216-037-00	METAL GLAZE 330 5%	1/10W	RV001	1-230-122-00	RES, VAR, CARBON 100K (SLOW ADJ)	
030	1-216-037-00	METAL GLAZE 330 5%	1/10W	RV002	1-230-122-00	RES, VAR, CARBON 100K (SLOW ADJ)	
031	1-216-072-00	METAL GLAZE 9.1K 5%	1/10W	RVD03	1-237-091-21	RES, ADJ, METAL GLAZE 100K (SLOW TRACKING CENTER)	
032	1-216-081-00	METAL GLAZE 22K 5%	1/10W	RVD04	1-237-091-21	RES, ADJ, METAL GLAZE 100K (SLOW TRACKING CENTER)	
033	1-216-089-00	METAL GLAZE 47K 5%	1/10W	RY101	1-228-988-00	RES, VAR, CARBON 10K/10K (PHONES LEVEL)	
034	1-216-099-00	METAL GLAZE 120K 5%	1/10W	SWITCH			
035	1-216-072-00	METAL GLAZE 9.1K 5%	1/10W	S001	1-554-174-00	SWITCH, KEY BOARD	
036	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S002	1-554-174-00	SWITCH, KEY BOARD (EJECT)	
037	1-216-072-00	METAL GLAZE 9.1K 5%	1/10W	S003	1-554-174-00	SWITCH, KEY BOARD (PLAY)	
038	1-216-073-00	METAL GLAZE 10K 5%	1/10W	S004	1-554-174-00	SWITCH, KEY BOARD (PAUSE)	
039	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S005	1-554-174-00	SWITCH, KEY BOARD (REW)	
040	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S006	1-554-174-00	SWITCH, KEY BOARD (STOP)	
041	1-216-073-00	METAL GLAZE 10K 5%	1/10W	S007	1-554-174-00	SWITCH, KEY BOARD (FF)	
042	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S008	1-554-088-00	SWITCH, KEY BOARD (WRITE)	
043	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S009	1-554-174-00	SWITCH, KEY BOARD (COUNTER RESET)	
045	1-216-072-00	METAL GLAZE 9.1K 5%	1/10W	S010	1-570-864-11	SWITCH, SLIDE (DATA SCREEN)	
046	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S011	1-554-174-00	SWITCH, KEY BOARD (LOAD)	
047	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S012	1-554-174-00	SWITCH, KEY BOARD (SAVE)	
048	1-216-099-00	METAL GLAZE 120K 5%	1/10W	S013	1-554-174-00	SWITCH, KEY BOARD (CLEAR)	
049	1-216-072-00	METAL GLAZE 9.1K 5%	1/10W	S014	1-554-174-00	SWITCH, KEY BOARD (EDIT)	
050	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S015	1-554-174-00	SWITCH, KEY BOARD (END)	
R051	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S016	1-554-174-00	SWITCH, KEY BOARD (POWER)	
R052	1-216-089-00	METAL GLAZE 47K 5%	1/10W	S017	1-570-864-11	SWITCH, SLIDE (RECORDER INPUT SELECT)	
R101	1-216-029-00	METAL GLAZE 150 5%	1/10W	S018	1-554-174-00	SWITCH, KEY BOARD (EJECT)	
R103	1-216-081-00	METAL GLAZE 22K 5%	1/10W	S019	1-554-174-00	SWITCH, KEY BOARD (PLAY)	
R104	1-216-089-00	METAL GLAZE 47K 5%	1/10W				
R105	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W				
R106	1-216-049-00	METAL GLAZE 1K 5%	1/10W				
R108	1-216-075-00	METAL GLAZE 12K 5%	1/10W				

When indicating parts by reference number, please include the board name.

FB-2P

TR-26P

TC-7P

JB-1P

JB-2P

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
S020	1-554-174-00	SWITCH, KEY BOARD (PAUSE)		*A-7070-618-A JB-2 (P) BOARD, COMPLETE (Ref.No. 8,000 Series)			
S021	1-554-174-00	SWITCH, KEY BOARD (REW)		*****			
S022	1-554-174-00	SWITCH, KEY BOARD (STOP)		<u>CAPACITOR</u>			
S023	1-554-174-00	SWITCH, KEY BOARD (REC)		C011	1-124-443-00	ELECT 100MF 20% 10V	
S024	1-554-174-00	SWITCH, KEY BOARD (FF)		C012	1-101-004-00	CERAMIC 0.01MF 50V	
S025	1-554-174-00	SWITCH, KEY BOARD (AUDIO DUB)		C013	1-102-074-00	CERAMIC 0.001MF 10% 50V	
S026	1-554-174-00	SWITCH, KEY BOARD		<u>CONNECTOR</u>			
S101	1-870-836-11	SWITCH, SLIDE (MONITOR)		CN011	1-506-471-11	PIN, CONNECTOR 5P	
S102	1-870-836-11	SWITCH, SLIDE (PLAYER)		<u>DIODE</u>			
*****				D011	8-719-000-12	DIODE MC931	
*A-7070-615-A TR-26 (P) BOARD, COMPLETE (Ref.No. 8,000 Series)				<u>JACK</u>			
<u>CONNECTOR</u>				J011	1-537-005-21	JACK BOARD (MONITOR VIDEO OUT 2/ DC OUT 5V/MONITOR AUDIO OUT (L))	
CN021	*1-554-014-41	PIN, CONNECTOR 4P		<u>TRANSISTOR</u>			
<u>VARIABLE RESISTOR</u>				Q011	8-729-117-54	TRANSISTOR 2SA1175-F	
RV021	1-230-694-11	RES, VAR, CARBON 250K (STILL ADJ: PLAYER)		<u>RESISTOR</u>			
RV022	1-230-694-11	RES, VAR, CARBON 250K (STILL ADJ: RECORDER)		R011	1-249-425-11	CARBON 4.7K 1/4W	
*****				R012	1-249-393-11	CARBON 10 1/4W	
*A-7070-616-A TC-7 (P) BOARD, COMPLETE (Ref.No. 8,000 Series)				*****			
*3-724-111-01 HOLDER, CONNECTOR				<u>CONNECTOR</u>			
<u>CONNECTOR</u>				CN402	1-566-769-11	SOCKET, DIN (SMALL TYPE) 5P (TITLE KEY BOARD)	
*****				*****			
*A-7070-617-A JB-1 (P) BOARD, COMPLETE (Ref.No. 8,000 Series)				<u>CAPACITOR</u>			
<u>CAPACITOR</u>				C031	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C032	1-102-074-00	CERAMIC 0.001MF 10% 50V		C032	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C033	1-102-074-00	CERAMIC 0.001MF 10% 50V		C033	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C034	1-102-074-00	CERAMIC 0.001MF 10% 50V		C034	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C035	1-102-074-00	CERAMIC 0.001MF 10% 50V		C035	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C036	1-102-074-00	CERAMIC 0.001MF 10% 50V		C036	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C037	1-102-074-00	CERAMIC 0.001MF 10% 50V		C037	1-102-074-00	CERAMIC 0.001MF 10% 50V	
<u>CONNECTOR</u>				<u>CONNECTOR</u>			
JT031	1-537-137-21	TERMINAL BOARD		*****			
*****				*****			

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

IG-1P

CO-3

CO-4

ef.No Part No. Description Remark

*A-7070-822-A IG-1 (P) BOARD, COMPLETE (Ref.No.9,000
***** Series)

CONNECTOR

CN001 *1-564-022-31 PIN, CONNECTOR 12P
 CN002 1-506-489-11 PIN, CONNECTOR 10P
 CN003 1-506-484-11 PIN, CONNECTOR 5P
 CN004 1-506-483-21 PIN, CONNECTOR 4P
 CN005 *1-564-022-41 PIN, CONNECTOR 12P

CN006 *1-564-037-11 PIN, CONNECTOR 12P
 CN007 1-506-492-11 PIN, CONNECTOR 3P

IC LINK

PS001A 1-532-839-21 LINK, IC (PRF 1000 1A)
 PS002A 1-532-837-21 LINK, IC (PRF 530 0.63A)
 PS003A 1-532-838-21 LINK, IC (PRF 800 0.8A)
 PS004A 1-532-838-21 LINK, IC (PRF 800 0.8A)
 PS005A 1-532-841-21 LINK, IC (PRF 1600 1.6A)

PS006A 1-532-838-21 LINK, IC (PRF 800 0.8A)
 PS007A 1-532-841-21 LINK, IC (PRF 1600 1.6A)
 PS008A 1-532-837-21 LINK, IC (PRF 530 0.63A)
 PS009A 1-532-838-21 LINK, IC (PRF 800 0.8A)
 PS010 1-532-838-21 LINK, IC (PRF 800 0.8A)

PS011 1-532-841-21 LINK, IC (PRF 1600 1.6A)
 PS012 1-532-837-21 LINK, IC (PRF 530 0.63A)

TRANSISTOR

Q001 8-729-117-54 TRANSISTOR 2SA1175-F

RESISTOR

R001 1-249-441-11 CARBON 100K 5% 1/4W
 R002 1-249-437-11 CARBON 47K 5% 1/4W

Ref.No Part No. Description Remark

*A-7070-825-A CO-3 BOARD, COMPLETE (Ref.No.8,000
***** Series)

CAPACITOR

C401 1-163-038-00 CERAMIC CHIP 0.1MF 25V
 C402 1-163-038-00 CERAMIC CHIP 0.1MF 25V
 C403 1-126-157-11 ELECT 10MF 20% 10V

TRANSISTOR

Q401 8-729-901-01 TRANSISTOR DTC144EK
 Q402 8-729-901-01 TRANSISTOR DTC144EK

RESISTOR

R401 1-216-049-00 METAL GLAZE 1K 5% 1/10W
 R402 1-216-049-00 METAL GLAZE 1K 5% 1/10W

VARIABLE RESISTOR

RV401 1-230-661-11 RES, VAR, CARBON 10K (IN POINT ADJUST)
 RV402 1-230-661-11 RES, VAR, CARBON 10K (OUT POINT ADJUST)

SWITCH

S401 1-570-157-11 SWITCH, SLIDE (MODE SELECT)

*A-7070-826-A CO-4 BOARD, COMPLETE (Ref.No.8,000
***** Series)

DIODE

D501 8-719-109-93 DIODE R06.2ES-B2

JACK

J501 1-507-980-31 JACK (PAUSE OUT)

Note: The components identified by mark Δ or dotted
 line with mark Δ are critical for safety.
 Replace only with part number specified.

When indicating parts by refer-
 ence number, please include the
 board name.

POWER BLOCK

Ref.No Part No. Description
 A1-413-412-12 POWER BLOCK

 9-993- -01 POWER BOARD

CAPACITOR

C101 A		0.47MF	250V
C102 A		0.0047MF	400V
C103 A		0.0047MF	400V
C104	ELECT	47MF	400V
C105		0.01MF	630V
C106		0.00047MF	2KV
C107	1-130-497-11	0.15MF	50V
C108	1-130-497-11	0.022MF	50V
C109	1-130-491-11	0.047MF	50V
C110	1-130-491-11	0.047MF	50V
C111		0.0047MF	400V
C112		0.0047MF	400V
C113		0.0047MF	400V
C114		0.0047MF	400V
C201	9-993-702-01	ELECT	25V
C202	1-124-126-11	ELECT	25V
C203	1-123-875-11	ELECT	10MF
C204	9-993-705-01	ELECT	1000MF
C205	9-993-705-01	ELECT	1000MF
C206	9-993-703-01	ELECT	3900MF
C207	9-993-703-01	ELECT	3900MF
C208	1-123-875-11	ELECT	10MF
C209	9-993-704-01	ELECT	1500MF
C210	9-993-704-01	ELECT	1500MF
C211 A	9-993-706-01	ELECT	1MF
C212 A	9-993-704-01	ELECT	1500MF
C213	1-124-126-11	ELECT	47MF
C214	1-123-875-11	ELECT	10MF
C215	1-123-875-11	ELECT	10MF
C216	1-130-483-11	MYLAR	0.01MF
C217	1-130-483-11	MYLAR	0.01MF

Remark Ref.No Part No. Description Remark
 C218 9-991-704-01 ELECT 1500MF 10V
 C219 1-136-283-21 FILM 0.1MF 63V
 C220 9-993-706-01 ELECT 1MF 50V

DIODE

D101 A	8-719-510-06	DIODE	51W80
D102	9-993-709-01	DIODE	5H-1FX08
D103	9-993-710-01	DIODE	155144
D104	9-993-711-01	DIODE	05442
D105	9-993-711-01	DIODE	05442
D201	8-719-907-41	DIODE	ER643-02
D202	9-993-712-01	DIODE	F10P040
D203	9-993-712-01	DIODE	F10P040
D204	8-719-200-29	DIODE	11DQ04
D205	8-719-907-41	DIODE	ER643-02
D206	8-719-200-82	DIODE	11ES2
D207	8-719-200-82	DIODE	11ES2
D208	8-719-200-82	DIODE	11ES2

FUSE

F101 A 1-532-078-11 FUSE, TIME-LAG (1A 250V)

IC

IC201	9-993-713-01	IC MS231L
IC202	9-993-713-01	IC MS231L
IC203	9-993-714-01	IC LS431
IC204		IC TA79L009

COIL

L101 A		LINE FILTER
L201	9-993-716-01	COIL, CHOKE 5UH
L202	9-993-716-01	COIL, CHOKE 5UH
L203	9-993-716-01	COIL, CHOKE 5UH
L204	9-993-716-01	COIL, CHOKE 5UH

PHOTO COUPLER

PC101A PHOTO COUPLER PC-101
 PC201A 8-719-902-56 PHOTO COUPLER PC-817

TRANSISTOR

Q101 A		TRANSISTOR	25C3909
Q102 A	8-729-906-02	TRANSISTOR	25C2050Q
Q201	8-729-281-53	TRANSISTOR	25C1815
Q202	9-993-708-01	TRANSISTOR	25C4064
Q203	8-729-281-53	TRANSISTOR	25C1815
Q204	9-993-708-01	TRANSISTOR	25C4064
Q205	8-729-281-53	TRANSISTOR	25C1815
Q207	8-729-281-53	TRANSISTOR	25C1815

RESISTOR

R101 A		METAL	1	2W
R102 A		METAL	2.2	5W
R103 A		CARBON	390K	1/2W
R104		METAL OXIDE	100K	2W
R105 A	1-206-479-61	METAL OXIDE	100	2W
R106	9-993-688-01	CARBON	2200	1/5W
R107	9-993-686-01	CARBON	1K	1/5W

Note: The components identified by mark A or dotted line with mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

POWER BLOCK

Q'ty	Part No.	Description	Remark
3	A-1-706-479-61	METAL OXIDE	47
3	9-993-683-01	CARBON	390
1	9-993-684-01	CARBON	470
1	9-993-692-01	CARBON	10K
2	9-993-692-01	CARBON	10K
3	9-993-694-01	CARBON	47K
4	9-993-694-01	CARBON	47K
5	9-993-693-01	CARBON	12K
6	9-993-693-01	CARBON	12K
7	9-993-690-01	CARBON	3300
9	9-993-694-01	CARBON	47K
9	9-993-694-01	CARBON	47K
0	9-993-685-01	CARBON	1K
1	9-993-691-01	CARBON	4700
2	9-993-690-01	CARBON	3300
3	9-993-685-01	CARBON	680
4	9-993-689-01	CARBON	2700
5	9-993-689-01	CARBON	2200
6	9-993-681-01	CARBON	47
7	9-993-694-01	CARBON	47K
8	9-993-694-01	CARBON	47K
11	9-993-682-01	CARBON	330
12	9-993-687-01	CARBON	1500

VARIABLE RESISTOR

101	9-993-718-01	RES, ADJ	5K
102	9-993-719-01	RES, ADJ	2K
103	9-993-719-01	RES, ADJ	2K

TRANSFORMER

11	A-9-993-717-01	TRANSFORMER, DRIVE	
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ZENER DIODE

201	8-719-160-43	ZENER DIODE RD9.1F	
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Ref. No	Part No.	Description	Remark
		MISCELLANEOUS	

	A-7048-102-A	DRUM ASSY (DGH-120-R)	
	1-161-057-00	CAP, CERAMIC 0.033MF X (FOR M904, M905)	
	1-526-954-11	AC INLET	
M902	8-835-304-01	MOTOR, DC U-11B (REEL)	
M903	8-835-196-11	MOTOR, DC BMF-2802A (CAPSTAN)	
M904	X-3711-936-1	MOTOR ASSY, FL (CASSETTE LOADING)	
M905	8-835-138-01	MOTOR, DC (ONR-53018) (CONTROL)	
M906	A-7040-065-A	MOTOR ASSY, L (LOADING)	
M907	1-541-360-21	MOTOR, DC BLUSHLESS FAN	
M901A	1-454-377-31	SOLENOID, PLUNGER	
S903	1-553-226-00	SWITCH, LEAF (CASSETTE LOCK)	
S904	1-554-942-11	SWITCH, PUSH (RECORG)	

ACCESSORIES AND PACKING MATERIALS

Part No.	Description	Remark
A-7002-262-A	CONTROLLER BLOCK ASSY (RM-E720)	
1-464-925-21	KEYBOARD, TITLE (KI-720P)	
1-906-412-11	ADAPTOR, PLUG	
1-906-521-11	PLUG ADAPTOR	
A-1-556-760-11	CORD, POWER (3 CORE)	
1-557-037-21	CABLE, AUDIO VIDEO	
1-558-102-11	CORD, CONNECTION	
1-574-516-11	CORD, CONNECTION	
*3-697-977-11	INDIVIDUAL CARTON	
*3-697-978-01	CUSHION (UPPER)	
*3-697-979-01	CUSHION (LOWER)	
*3-697-980-01	CUSHION, KEY BOARD	
*3-704-334-01	SHEET (STANDARD), PROTECTION	
*3-704-350-01	SHEET (STANDARD), PROTECTION	
3-769-840-41	MANUAL, INSTRUCTION	
3-769-840-51	MANUAL, INSTRUCTION	
3-769-840-61	MANUAL, INSTRUCTION	
3-786-045-41	MANUAL, INSTRUCTION (CARD)	
3-786-045-51	MANUAL, INSTRUCTION (CARD)	
3-786-045-61	MANUAL, INSTRUCTION (CARD)	
4-362-945-01	BAG, PROTECTION	

Note: The components identified by mark A or dotted line with mark A are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
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HARDWARE LIST

SCREW

7-621-255-20	SCREW +P	2X4
7-621-255-25	SCREW +P	2X4
7-621-255-50	SCREW +P	2X8
7-621-255-65	SCREW +P	2X10
7-621-772-10	SCREW +B	2X4
7-627-553-18	SCREW, PRECISION +P	2X2
7-627-553-28	SCREW, PRECISION +P	2X2.5
7-627-553-48	SCREW, PRECISION +P	2X4
7-627-850-18	SCREW, PRECISION +P	1.4X2.5
7-628-253-00	SCREW +PS	2X4
7-628-253-20	SCREW +PS	2X6
7-628-254-10	+PSM, 2.6X6	
7-682-165-09	SCREW +P	3X30
7-685-133-19	SCREW +P 2.6X6	TYPE2 NON-SLIT
7-685-134-19	SCREW +P 2.6X8	TYPE2 NON-SLIT
7-685-646-79	SCREW +BVTP	3X8 TYPE2 IT-3
7-685-646-79	SCREW +BVTP	3X8 TYPE2 IT-3
7-685-646-79	SCREW +BVTP	3X8 TYPE2
7-685-646-79	SCREW +BVTP	3X8 TYPE2
7-685-647-79	SCREW +BVTP	3X10 TYPE2 IT-3
7-621-255-15	SCREW +PTT	2X3 (S)
7-621-255-45	SCREW +BYTT	2X6 (S)

STOP RING

7-624-102-04	STOP RING 1.5, TYPE -E
7-624-105-04	STOP RING 2.3, TYPE -E
7-624-106-04	STOP RING 3.0, TYPE -E

STEEL BALL

7-671-112-01	STEEL, BALL
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When indicating parts by reference number, please include the board name.

MEMO

SECTION 7

MECHANICAL ADJUSTMENTS

7-1. MECHANICAL CHECK, ADJUSTMENT AND PREPARATIONS FOR REPLACEMENT

Note: Regarding the removal procedures of the cabinet and boards, see Section 2, DISASSEMBLY.

7-1-1. Cassette Compartment Assembly and Operation without Tape Inserted

Note: The set will not operate if there is a strong light source near it.

1. Loading (See Fig. 7-1.)

- 1) Remove the upper/lower covers and front panel according to Section 2, DISASSEMBLY 2-1, 2-2.
- 2) Remove the cassette compartment assembly ① according to Section 2, DISASSEMBLY 2-15. (Do not remove connectors.)
- 3) Connect to power supply.
- 4) Apply tape to the RECOG switch ④ to keep the pin pressed down.
- 5) Push microswitch ③ once in the direction of arrow ② and release. (See Fig. 7-1.)
- 6) Turn on the leaf switch ⑤. (See Fig. 7-1.)

2. Putting into playback state (See Fig. 7-1.)

- 1) Perform 1. Loading.
 - 2) Hook the rubber band ⑥ between S reel and T reel.
 - 3) Press the playback button, and when the T reel side starts to rotate, push the tension regulator arm assembly ⑦ in the direction of arrow ⑧. (At this time, the tension regulator band is released and S reel side rotates.)
 - 4) Press the stop button to stop.
3. Eject (See Fig. 7-1.)
- 1) Press the EJECT button.

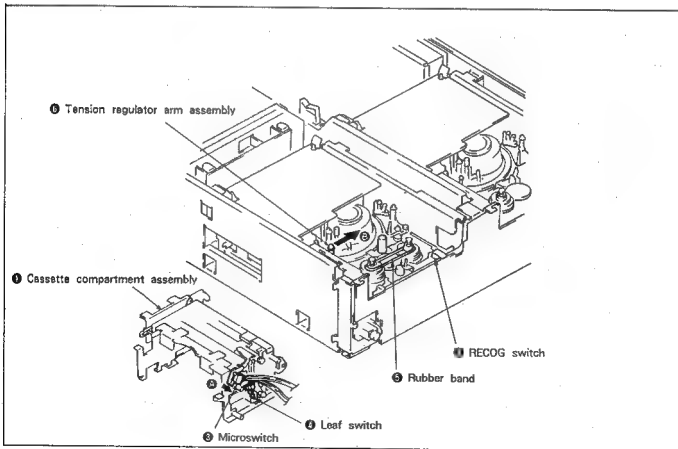


Fig. 7-1.

1-2. Handling of Mode Selector

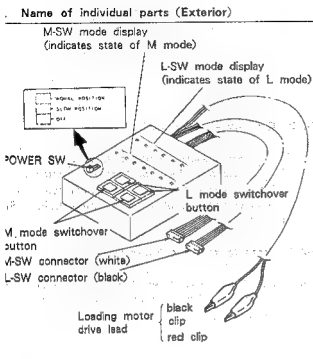


Fig. 7-2.

Connection (See Fig. 7-3.)

- 1) Remove the mechanism section according to Section 2, DISASSEMBLY 2-5.
- 2) Remove the MB-9P, MD-18P, HK-3 and SE-7P boards referring to Section 2, DISASSEMBLY 2-10 to 2-12.
- 3) Remove the two connectors on the MS-4 and LS-9 boards.
- 4) Insert the M-SW connector (6P connector, 6 harness, white) ① into the MS-4 board on the set.
- 5) Insert the L-SW connector (6P connector, 4 harness, black) ② into the LS-9 board on the set.
- 6) Connect the red clip of the loading motor drive lead ③ to the red lead wire side of the loading motor and the black clip to the gray lead wire side.

1. Caution

- 1) When operating L-SW, be sure to set the M-SW mode to LOADING/UNLOADING.
- 2) When operating M-SW, be sure to set the L-SW mode to LOADING TOP or LOADING END.

4. Handling

BLANK lights up regardless of L MODE or M MODE when it is in neither mode during select.

1) L-MODE

- When the right L-MODE switch button is pressed continuously, the display lights up from LOADING TOP → LOADING END, in order in right direction.
- To go from LOADING END → LOADING TOP, press the left switch button continuously until the desired MODE is reached.
- In slow position, the L mode operates more slowly than for normal position.

2) M-MODE

- Set L-SW to LOADING TOP before performing EJECT.
- Set L-SW to LOADING END to perform FF/REW → RVS or RVS → FF/REW.
- When the right M-MODE switch button is pressed continuously, the display lights up from EJECT → RVS, in order in right direction.
- To go from RVS → EJECT, press the left switch button continuously until the desired MODE is reached.

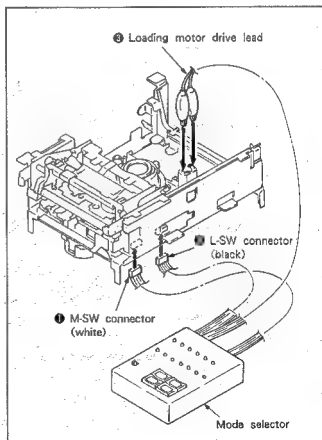


Fig. 7-3.

7-2. PERIODIC CHECK AND MAINTENANCE

Please perform the following periodic checks and maintenance in order to obtain optimum set function and performance, and to keep the mechanism and tape in good condition. Also, perform the maintenance below after repair, regardless of the length of time the set has been used by the user.

7-2-1. Cleaning of Rotary Drum Assembly

- 1) Press a chamois cloth (Ref. No. J-2) soaked in cleaning fluid (Ref. No. J-1) lightly against the rotary drum assembly, and slowly rotate the rotary upper drum assembly counterclockwise by hand to clean.

Note: Do not use the power supply to rotate the motor, and do not rotate the motor clockwise by hand.

Also, there is a danger of damaging the head tip if the chamois cloth is moved vertically relative to the head tip (up/down direction of drum), so please follow the instruction above for cleaning.

7-2-2. Cleaning of Tape Path

- 1) Place the cassette compartment assembly in EJECT state, and clean the tape path system (No.1 to No.11 guides, capstan shaft, pinch roller) with a chamois cloth soaked in cleaning fluid. (See Fig. 7-4.)

7-2-3. Cleaning of Drive System

- 1) Clean the drive system (timing belt, surface of reel tables) with a chamois cloth soaked in cleaning fluid.

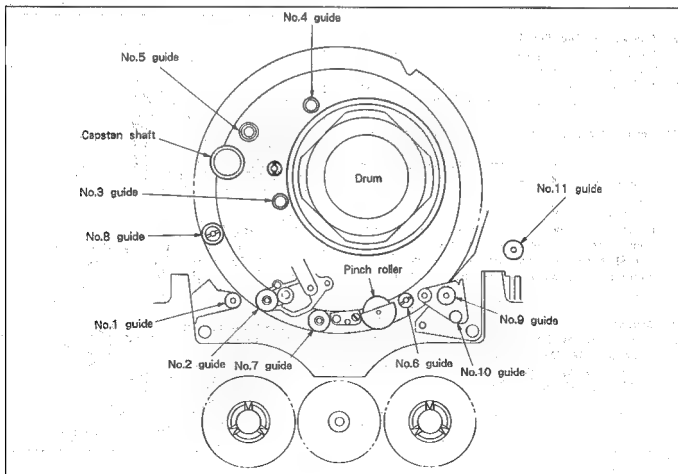


Fig. 7-4.

1-2.4. Periodic Check

Perform following according to number of hours of use.

		○Cleaning ◎Lubrication ★Replacement ☆Check										
Location		Hours of Use (H)										Notes
		500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	
Tape Path	Cleaning of tape path surface	○	○	○	○	○	○	○	○	○	○	Be careful of oil
	Cleaning and degaussing of rotary drum assembly	○	○	○	○	○	○	○	○	○	○	Be careful of oil
Drive System	L motor belt	○	○	○	○	○	○	○	★	○	○	3-686-546-01: Replace here, or replace every two years.
	Plunger solenoid	-	-	-	○	-	-	-	○	-	-	1-454-377-21
	Capstan shaft bearing	-	◎	-	◎	-	◎	-	◎	-	◎	Be careful not to get oil on the tape path surface.
	Loading motor	-	☆	-	☆	-	☆	-	☆	-	☆	A-7040-065-A
	Control motor	-	☆	-	☆	-	☆	-	☆	-	☆	8-835-304-01
	Reel motor	-	☆	-	☆	-	☆	-	☆	-	☆	
Performance Check	Abnormal noise	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	Back tension measurement	-	☆	-	☆	-	☆	-	☆	-	☆	
	Brake system	-	☆	-	☆	-	☆	-	☆	-	☆	
	FWD, RVS torque measurement	-	☆	-	☆	-	☆	-	☆	-	☆	

Note: When performing an overhaul, refer to the items above when replacing parts.

Note: Regarding oil

- Be sure to use designated oil. (There is a danger of trouble occurring if a different viscosity is used.)
Oil : Parts No.7-861-018-18
(Mitsubishi Diamond Oil hydrofluid NT-68)
- Be sure to use clean oil when lubricating the shaft bearing, because there is a danger of wear and burning if dirty oil is used.
- One drop of oil means the amount which sticks to a 2 mm diameter rod, as shown in Fig. (See Fig. 7-5.)

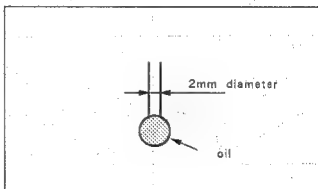



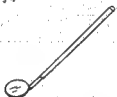
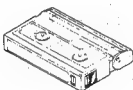



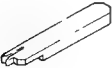


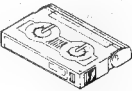
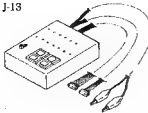
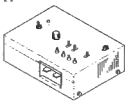
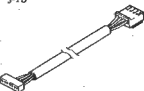
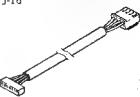


Fig. 7-5.

7-2.5. Service Jig Table

Ref. No.	Name	Part No.	Jig	Use Notes
J-1	Cleaning fluid	Y-2031-001-1		
J-2	Chamois cloth	2-034-697-00		
J-3	Head degausser	Commercially sold		
J-4	Small adjustment mirror, Spare mirror	J-6080-029-A J-6080-030-1	SL-5052	Tape path
J-5	Alignment tape (WR5-1C)	8-967-995-06		Tape path
J-6	Dial tension gauge	J-6080-827-A		torque measurement
J-7	Tension measurement reel	J-6080-831-A		with ϕ 30 tape
J-8	Tension measurement reel	J-6080-832-A		with ϕ 16 string
J-9	No.10 gear phase jig	J-6080-823-A	GD-2047	
J-10	Rotary drum jig	(packed with the repair rotary upper drum)		
J-11	No.6 guide lock screwdriver	J-6080-826-A		
J-12	FWD, RVS winding torque cassette	J-6080-824-A	GD-2086	
J-13	Mode selector	J-6080-825-A		for all models
J-14	Track shift jig	J-6080-891-A		Tape path
J-15	CTL connector connecting cord	J-6080-884-A		Tape path
J-16	RF/SWP connector connecting cord	J-6080-883-A		Tape path

Other equipment : • Oscilloscope
• Analog tester (20k Ω)

J-1 	J-2 	J-3 	J-4 
J-5 	J-6 	J-7 	J-8 
J-9 	J-10 (Packed with the rotary upper drum for repair) 	J-11 	J-12 
J-13 	J-14 	J-15 	J-16 

-3. MECHANICAL CHECK, ADJUSTMENT AND REPLACEMENT

- ote :
- Use the mode selector (Ref. No. J-13) for this mechanical check, adjustment and replacement.
 - The mode inside the is the mode set by pressing the mode selector button.
 - For recorder and player the same mechanism section is used.

-3-1. S Reel Table Assembly

- Removal (See Fig. 7-6.)
- Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-15.
 - Set to **FF/REW** mode.
 - Remove screw ① and remove reel table stopper ②.
 - Remove the S reel table assembly ③.

Note: Be sure to hold the upper reel claw section when removing. (See Fig. 7-6.(Note))

2. Mounting (See Fig. 7-6.)
- Put a half drop of oil on the upper point of shaft ④.
 - Move the S main brake assembly ⑤ in the direction of arrow.
 - Mount the S reel table assembly ③, being careful not to hit the tension regulator band assembly ⑥.
 - Mount the reel table stopper ② and tighten with screw ①.
 - Set to **LOADING/UNLOADING** mode.
 - Mount the cassette compartment assembly in opposite procedure of Section 2. DISASSEMBLY 2-15.

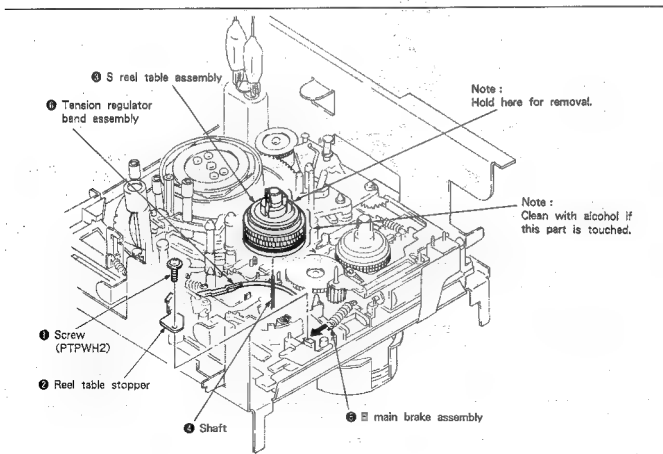


Fig. 7-6.

7-3.2. T Reel Table Assembly

1. Removal (See Fig. 7-7.)

- 1) Remove the cassette compartment assembly according to Section 2, DISASSEMBLY 2-15.
- 2) Set to **[UNLOADING WAIT]** mode.
- 3) Hook the spring ② on the T.S brake assembly ① to the claw of lock slider.
- 4) Remove the stopper washer ③ and remove the T.S brake assembly ①.
- 5) Set to **[EJECT]** mode.
- 6) Move drive gear B assembly ④ in the direction of the arrow.
- 7) Remove T reel table assembly ⑤.

Note: Be sure to hold the upper reel claw section when removing. (See Fig. 7-7. (Note))

2. Mounting (See Fig. 7-7.)

- 1) Put a half drop of oil on the upper point of shaft ⑥.
- 2) Move the drive gear B assembly ④ in the direction of the arrow. (Confirm **[EJECT]** mode.)
- 3) Mount the T reel table assembly ⑤.
- 4) Mount the T.S brake assembly ① and fix the stopper washer ③.
- 5) Hook the spring ② on the T.S brake assembly ① claw.
- 6) Set to **[LOADING TOP]**, **[LOADING/UNLOADING]** mode.
- 7) Mount the cassette compartment assembly in opposite procedure of Section 2, DISASSEMBLY 2-15.

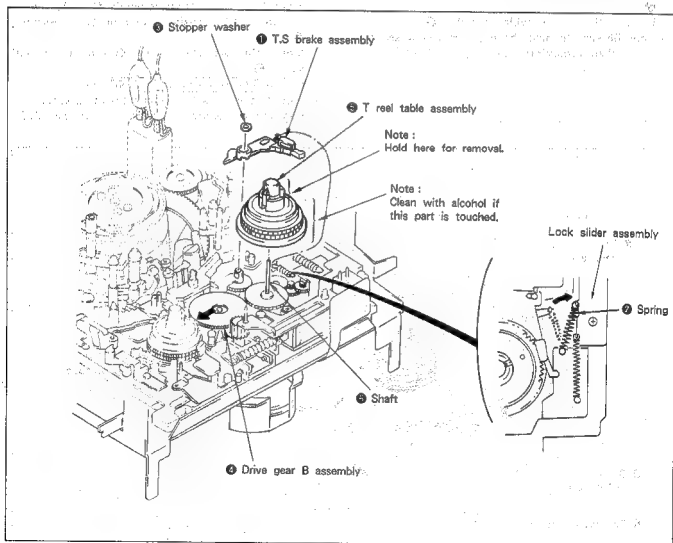


Fig. 7-7.

7-3. Pinch Press Arm Assembly

Removal (See Fig. 7-8.)

- 1) Hook the spring ① on the pinch press arm assembly ②.
- 2) Remove the stopper washer ③ and remove the pinch press arm assembly ②.

2. Mounting (See Fig. 7-8.)

- 1) Put a half drop of oil on the shaft ④.
- 2) Mount the pinch press arm assembly ② and fix the stopper washer ③.
- 3) Hook the spring ① on the spring hook assembly ⑤.

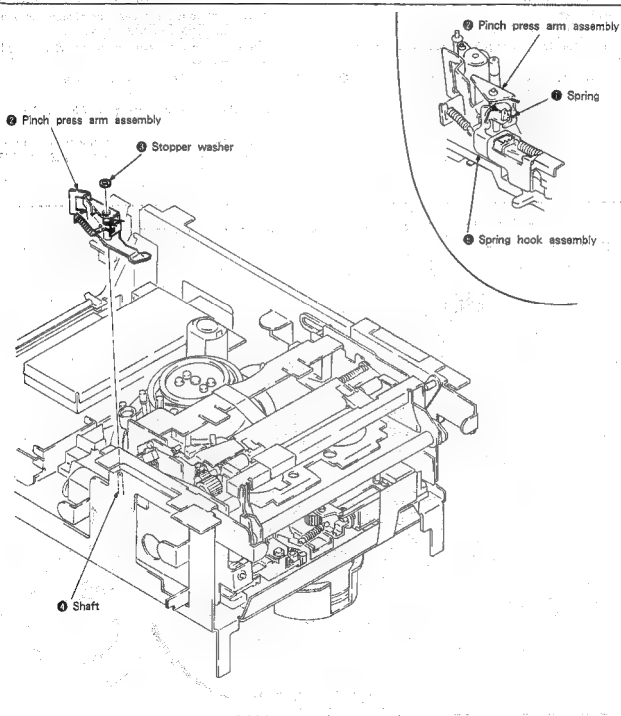


Fig. 7-8.

7-3.4. Tension Regulator Arm Assembly

1. Removal (See Fig. 7-9.)

- 1) Remove the cassette compartment assembly according to Section 2, DISASSEMBLY 2-15.
- 2) Change the spring position as described in 7-3-3, 1. Removal, 1). (See Fig. 7-8.)
- 3) Remove spring ①. (Note its hooking position.)
- 4) Remove screw ② and remove the spring hook assembly ③.
- 5) Set to **FF/REW** mode.
- 6) Remove the tension regulator band assembly claw ④.
- 7) Remove the tension regulator arm assembly ⑤.

2. Mounting (See Fig. 7-9.)

- 1) Put a half drop of oil on the shaft ⑥.
- 2) Mount the tension regulator arm assembly ⑤, inserting the tension regulator load arm assembly pin ⑦ in the tension regulator arm assembly ⑤ cam groove (on the back).
- 3) Mount the tension regulator band assembly claw ④. (Do not touch the band or change its shape.)
- 4) Set to **LOADING/UNLOADING** mode.
- 5) Mount the spring hook assembly ③ and tighten with screw ②.
- 6) Replace spring ① in its original position and lock the screw.
- 7) Hook the spring according to 7-3-3, 2. Mounting, 3).
- 8) Mount the cassette compartment assembly in opposite procedure of Section 2, DISASSEMBLY 2-15.

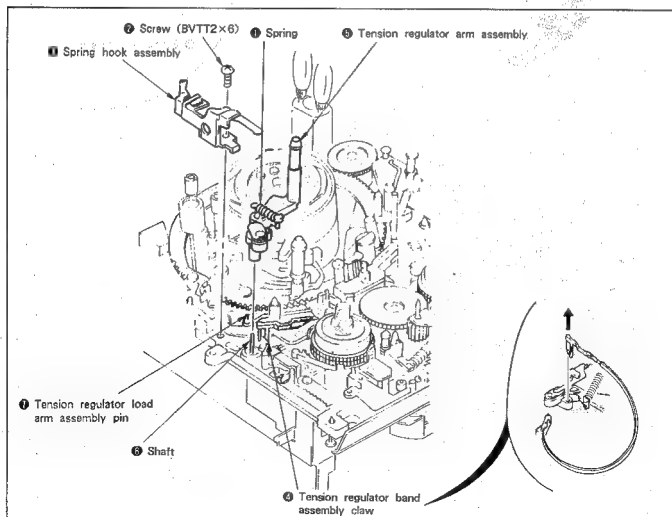


Fig. 7-9.

3-5. Tension Regulator Band Assembly

Removal (See Fig. 7-10.)

-) Remove the S reel table assembly according to 7-3-1. 1. Removal. (See Fig. 7-6.)
-) Remove the band arm claw ①.
-) Remove claw ② and remove the tension regulator band assembly ③.

2. Mounting (See Fig. 7-10.)

- 1) Mount the tension regulator band assembly ③.
(Do not touch the band or change its shape.)
- 2) Fit on the band arm claw ①.
- 3) Mount the S reel table assembly according to 7-3-1. 2. Mounting. (See Fig. 7-6.)
- 4) Perform 7-3-21. FWD Back Tension Adjustment.

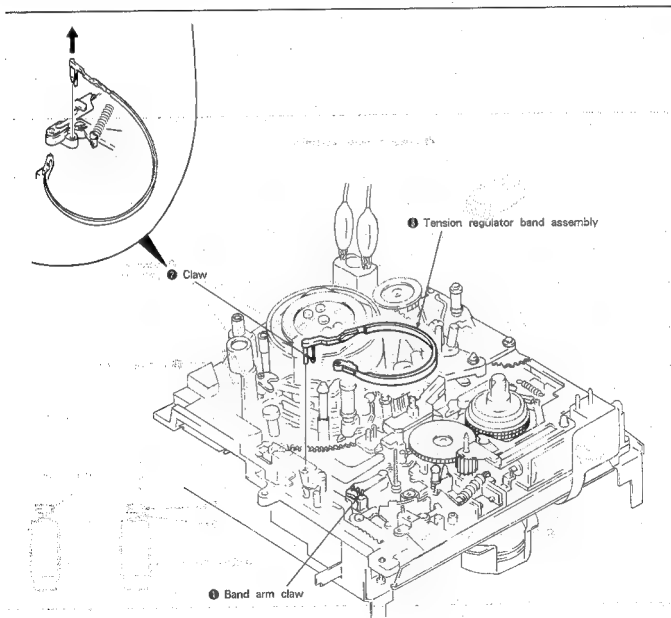


Fig. 7-10.

7-3-6. Loading Motor Assembly

1. Removal (See Fig. 7-11.)

- 1) Remove L motor belt ①.
- 2) Remove the CN302 connector (red) 2P ② from the RS-28 board.
- 3) Remove the two screws ③ and remove the loading motor assembly ④.

2. Mounting (See Fig. 7-11.)

- 1) Mount the loading motor assembly ④ and tighten with the two screws ③.
- 2) Connect CN302 connector (red) 2P ② to RS-28 board.
- 3) Mount L motor belt ①.

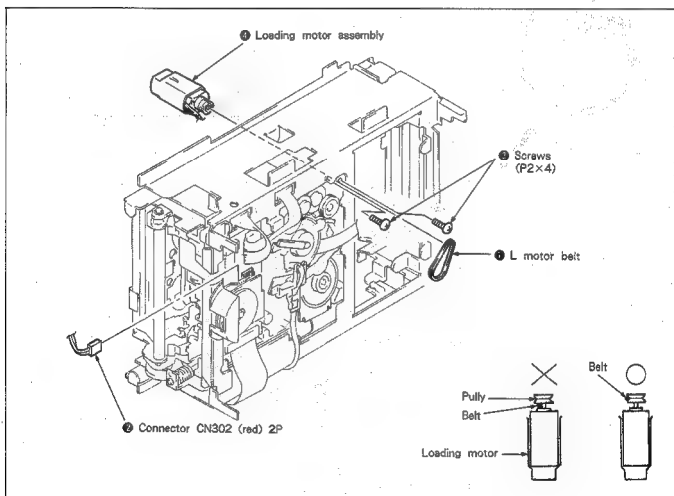


Fig. 7-11.

3-7. Threading Ring Assembly

Removal (See Fig. 7-12.)

- 1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-15.
- 2) Operate the mode selector, and move the guide base assembly 1 until just before it locks, and the No.2 guide assembly 2 until just before it locks where the ring stopper 3 screw is visible. (Do not move threading ring assembly 11.)
- 3) Remove the stopper washer 4 and remove No.10 gear 5.

- 4) Remove screw 6, and remove the roller top plate 7 and ring roller 8.
- 5) Remove the two screws 9, and remove the ring stopper 3 and ring roller 10.
- 6) Remove the threading ring assembly 11 in the direction of arrow.

Note: Be careful that the threading ring assembly 11 does not touch the drum when it is removed.

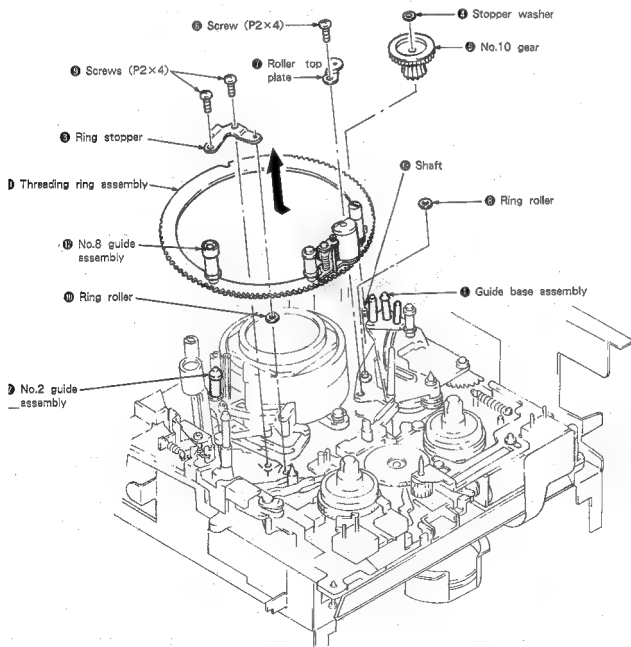


Fig. 7-12.

2. Mounting (See Fig. 7-12.)

- 1) Mount the threading ring assembly ⑪ so that it becomes in the unthreaded state (pinch roller arm assembly is on the front panel side.) (Confirm that is in the state in 1. Removal 2).)
- 2) Mount the ring roller ⑫ and ring stopper ⑬ and tighten with the two screws ⑭. (No.8 guide assembly ⑮ should be closer to the front panel than the ring stopper ⑬.)
- 3) Mount the ring roller ⑯ and roller top plate ⑰ and tighten with screw ⑱. (Confirm that the threading ring assembly matches the three ring rollers.)
- 4) Put a half drop of oil on the shaft ⑲.
- 5) Check that the protrusions on the drive changer assembly are in the indentations of the L-SW assembly and insert the No.10 gear phase alignment jig (Ref. No. J-9). (See Fig. 7-13.)
- 6) Mount No.10 gear ⑳ and fix stopper washer ㉑ while pushing the No.8 guide assembly ⑮ against the ring stopper ⑬.
- 7) Pull out the No.10 gear phase jig.
- 8) Set to **LOADING TOP** mode.
- 9) Mount the cassette compartment assembly in opposite procedure of Section 2, DISASSEMBLY 2-15.

Note: Be sure to perform 7-4. TAPE PATH ADJUSTMENT after mounting.

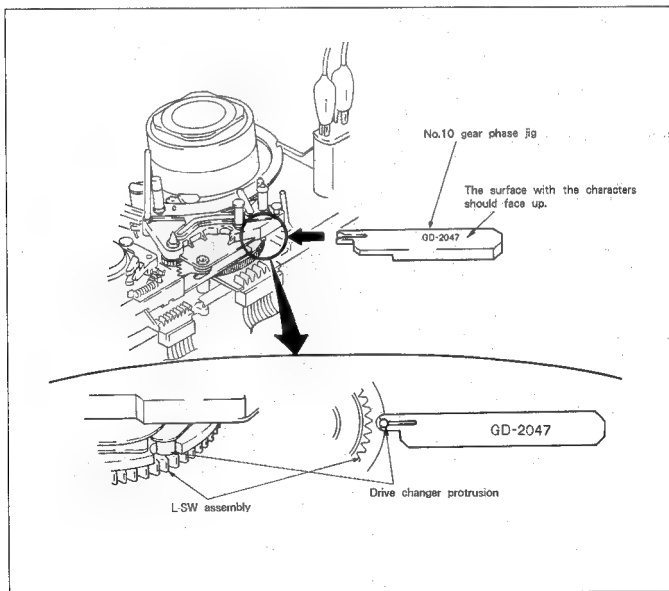


Fig. 7-13.

-3-8. Pinch Roller Assembly

Removal

-) Remove the threading ring assembly according to 7-3-7. 1. Removal. (See Fig. 7-12.)
-) Remove stopper washer ①. (See Fig. 7-14.)
-) Change the position of the spring ③ on No. 7 guide assembly ②. (See Fig. 7-15.)
-) Rotate pinch roller arm assembly ④ in the direction of arrow. (See Fig. 7-16.)
-) Remove pinch roller arm assembly ④ in the direction of arrow. (See Fig. 7-17.)
-) Remove spring ③. (See Fig. 7-18.)

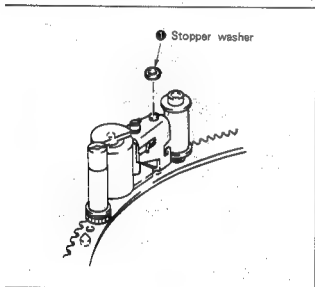


Fig. 7-14.

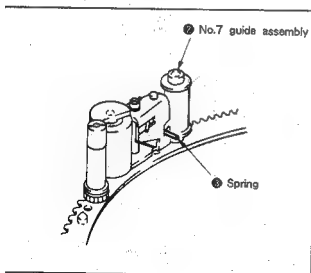


Fig. 7-15.

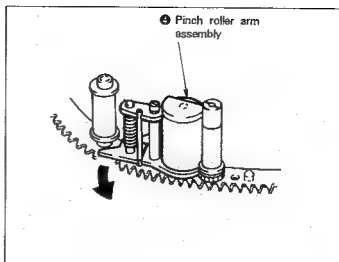


Fig. 7-16.

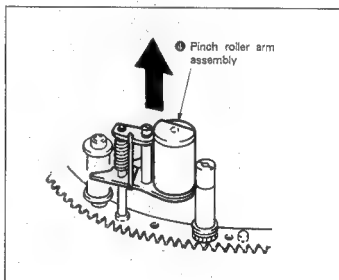


Fig. 7-17.

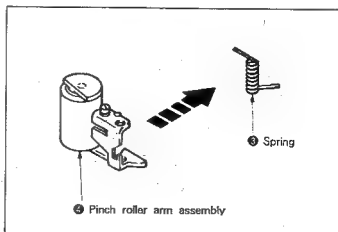


Fig. 7-18.

2. Mounting

- 1) Hook spring ③. (See Fig. 7-19.)
- 2) Insert the end of the clip ⑤ or another thin rod inside the pinch roller arm assembly hole ⑥. (See Figs. 7-20, and 7-21.)
- 3) Put the end of the clip ⑤ to the threading ring assembly shaft ⑦ and mount the pinch roller arm assembly ④. (See Figs. 7-22, and 7-23.)
- 4) Hook the spring ③ on No.7 guide assembly ②. At this time, confirm that the spring ③ is hooked onto section A. (See Fig. 7-24.)
- 5) Fix the stopper washer ①. (See Fig. 7-25.)
- 6) Mount the threading ring assembly according to 7-3-7, 2, Mounting. (See Figs. 7-12, and 7-13.)

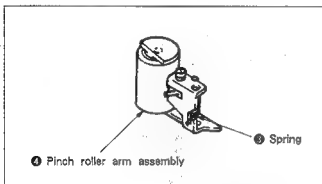


Fig. 7-19.

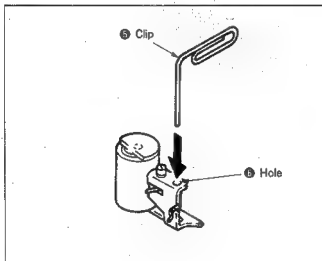


Fig. 7-20.

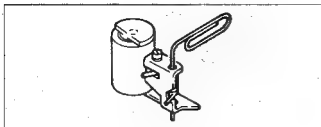


Fig. 7-21.

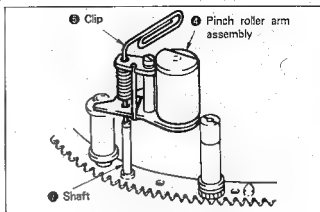


Fig. 7-22.

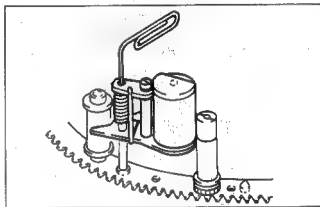


Fig. 7-23.

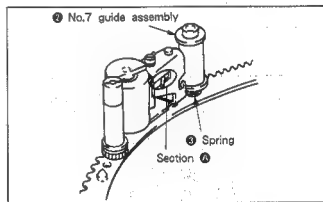


Fig. 7-24.

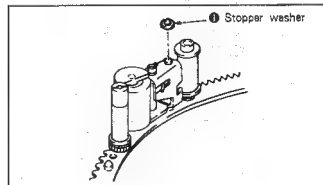


Fig. 7-25.

3-9. Slant Guide Block Assembly

Removal (See Fig. 7-26.)

- 1 Remove the cassette compartment assembly according to Section 2, DISASSEMBLY 2-15.
- 2 Remove the threading ring assembly according to 7-3-7. 1. Removal. (See Fig. 7-12.)
- 3 Remove screw ① and E ring ②.
- 4 Remove the slant guide block assembly ③.

Mounting

- 1 Operate the mode selector, and line up the right edge of the L slider assembly and the right edge of the lock slider assembly. (See Fig. 7-27.)
- 2 Set the slant guide block assembly guide base assembly in unthreaded state (guide base assembly is on front panel side) and mount. (See Fig. 7-28.)

Note: At this time, confirm the engagement position of the slant guide drive gear and L slider assembly gear. (See Fig. 7-27.)

- 3 Insert the E ring ② and tighten with screw ①. (See Fig. 7-26.)
- 4 Put in the state in 7-3-7. 1. Removal, 2).
- 5 Mount the threading ring assembly according to 7-3-7. 2. Mounting. (See Figs. 7-12. and 7-13.)
- 6 Mount the cassette compartment assembly in opposite procedure of Section 2, DISASSEMBLY 2-15.

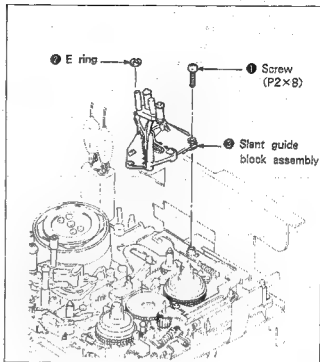


Fig. 7-26.

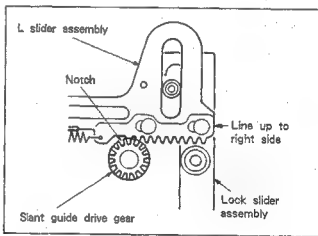


Fig. 7-27.

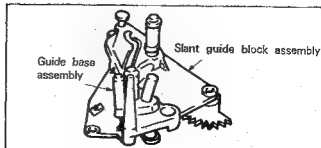


Fig. 7-28.

7-3-10. Entrance Guide (P) Assembly (No. 2 Guide Assembly)

1. Removal (See Fig. 7-29.)

- 1) Turn the rotary upper drum counterclockwise and remove the head section from the entrance guide (P) assembly ①.
- 2) Remove screw ② and the drum guard screw ③.
- 3) Remove guide nut ④, and remove guide flange ⑤, guide ⑥ and compression spring ⑦.
- 4) Remove the entrance guide (P) assembly ①.

2. Mounting (See Fig. 7-29.)

- 1) Confirm that **LOADING TOP** mode is set.
- 2) Engage the entrance guide (P) assembly and L slider assembly with their flat portions A and B as shown.
- 3) Mount the -coil spring ⑦, guide ⑥ and guide flange ⑤ in that order and then temporarily tighten the guide nut ④.
- 4) Tighten screw ② and the drum guard screw ③.

Note: Be sure to perform 7-4. TAPE PATH ADJUSTMENT after mounting.

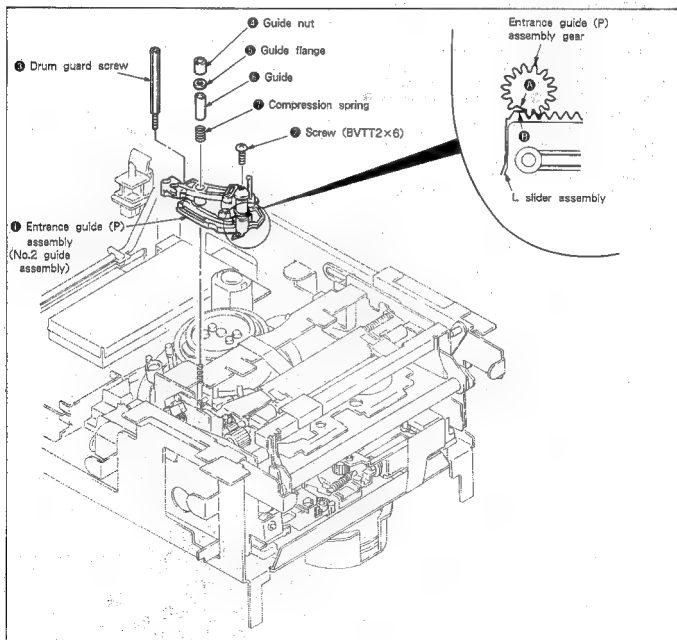


Fig. 7-29.

11. L Slider Assembly

Removal (See Fig. 7-30.)

Remove the slant guide block assembly according to 7-3-9, 1. Removal.

Remove the entrance guide (P) assembly according to 7-3-10, 1. Removal.

Set to **DRUM START** mode.

Remove slant guide drive gear ①.

Remove the tension regulator load arm assembly ② pin from the cam groove of the tension regulator arm assembly. (See 7-3-4. Tension Regulator Arm Assembly.)

Remove the two stopper washers ③.

Remove the L slider assembly ④ while pushing the RL arm assembly protrusion ⑤ in the direction of arrow.

Remove the stopper washer ① and remove the tension regulator load arm assembly ②.

Mounting

Grease. (See Fig. 7-31.)

Mount the tension regulator load arm assembly ② and fix the stopper washer ③.

Mount the L slider assembly ④ while pushing the RL arm assembly protrusion ⑤ in the direction of the arrow.

Fix the two stopper washers ③. (See Fig. 7-30.)

Put the tension regulator load arm assembly ② pin into the M slider groove. (See 7-3-15. M Slider.)

Refer to 7-3-4, 2. Mounting, 2), and insert the tension regulator load arm assembly ② pin in the tension regulator arm assembly cam groove. (See 7-3-4. Tension Regulator Arm Assembly.)

By operating the mode selector, match the right edge of the L slider assembly and that of the lock slider assembly. (See 7-3-9, 2. Mounting, 1).

Engage the slant guide drive gear ① so that the notch is 1 tooth away from the L slider assembly left side tooth. (See Fig. 7-32.)

Mount the entrance guide (P) assembly according to 7-3-10, 2. Mounting.

Mount the slant guide block assembly according to 7-3-9, 2. Mounting.

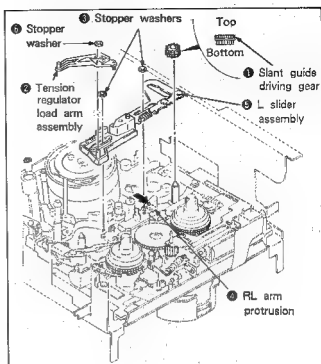


Fig. 7-30.

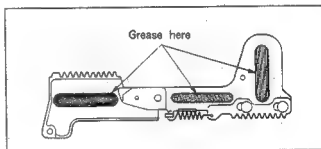


Fig. 7-31.

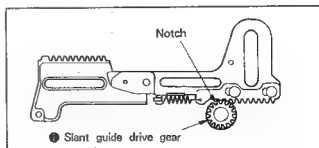


Fig. 7-32.

7-3-12. L-SW Assembly

1. Removal (See Fig. 7-33.)

- 1) Remove the L slider assembly according to 7-3-11. 1. Removal.
- 2) Remove lock slider retainer ①.
- 3) Remove screw ② and lock slider A ③.
- 4) Remove stopper washer ④ and remove torsion spring ⑤.
- 5) Remove drive change assembly ⑥.
- 6) Remove connector ⑦.
- 7) Remove the two screws ⑧ and remove the L-SW assembly ⑨.

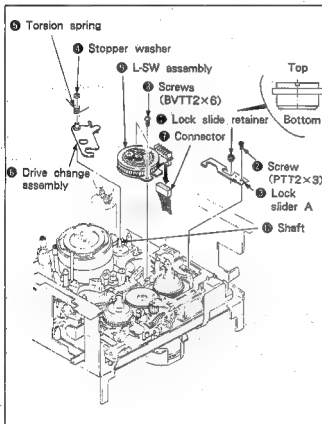


Fig. 7-33.

2. Mounting (See Fig. 7-33.)

- 1) Put a half drop of oil on the L-SW assembly ⑨ shaft (planetary roller shaft).
- 2) Mount L-SW assembly ⑨ and tighten with the two screws ⑧.
- 3) Connect connector ⑦.
- 4) Operate the mode selector and confirm that the L-SW assembly ⑨ rotates.
- 5) Put a half drop of oil on the shaft ⑩.
- 6) Grease the drive changer assembly ⑥. (See Fig. 7-34.)
- 7) Mount the drive changer assembly ⑥. (See Fig. 7-35.)
- 8) Hook the torsion spring ⑤ and fix the stopper washer ④.
- 9) Operate the mode selector and confirm that the L-SW assembly ⑨ rotates.
- 10) Mount lock slider A ③ and tighten with screw ②.
- 11) Mount lock slider retainer ①.
- 12) Operate the mode selector and set to the position in Fig. 7-35.
- 13) Mount the L slider assembly according to 7-3-11. 2. Mounting.

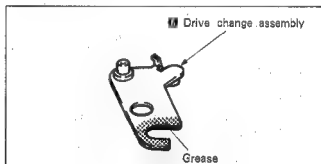


Fig. 7-34.

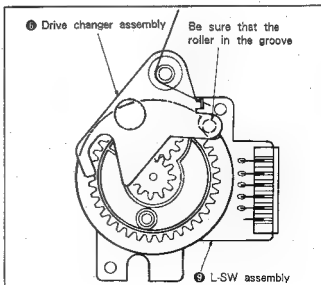


Fig. 7-35.

3-13. Plunger Solenoid

Removal (See Fig. 7-36.)

- 1) Remove the cassette compartment assembly according to Section 2, DISASSEMBLY 2-15.
- 2) Remove the T reel table assembly according to 7-3-2.
- 3) Remove spring ①.
- 4) Remove the screw ② according to 7-3-12. 1. Removal, 3).
- 5) Remove the two stopper washers ③.
- 6) Remove the lock slider assembly ④.
- 7) Unsolder plunger solenoid ⑤ at three places.
- 8) Remove the two screws ⑥ and the plunger solenoid ⑤.

2. Mounting (See Fig. 7-36.)

- 1) Insert the plunger solenoid pin ① into the P arm hole ⑦ and mount with the two screws ⑥.
- 2) Solder pins of plunger solenoid ⑤ at three places.
- 3) Mount lock slider assembly ④.
- 4) Fix the two stopper washers ③.
- 5) Fix the screw ② according to 7-3-12. 2. Mounting, 10).
- 6) Hook the spring ①.
- 7) Mount the T reel table assembly according to 7-3-2. 2. Mounting.
- 8) Mount the cassette compartment assembly in opposite procedure of Section 2, DISASSEMBLY 2-15.

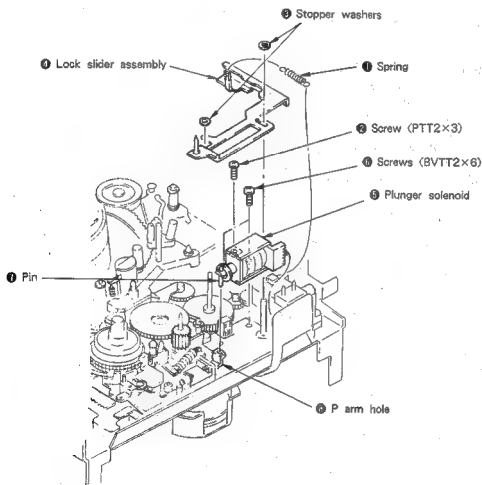


Fig.7-36.

7-3-14. M-SW Assembly

1. Removal (See Fig. 7-38.)
- 1) Remove CN301 connector (white) 2P from the RS-28 board and lengthen the wiring which comes outside.
- 2) Remove the T reel table assembly according to 7-3-2.
- 3) Remove stopper washer ① and remove the drive gear B assembly ②.
- 4) Remove the LD-1 board ③. (See Fig. 7-37.)
- 5) Remove lock slider according to 7-3-13. 1. Removal, 3) to 6).
- 6) Remove the spring ④ and remove B release arm assembly ⑤.
- 7) Confirm **EJECT** mode.
- 8) Remove stopper washer ⑥ and remove the mode output gear ⑦.
- 9) Remove screw ⑧.
- 10) Unsolder the RECOG switch ⑨ in three places, and remove it.
- 11) Disconnect connector ⑩.
- 12) Remove the three screws ⑪, and remove the control motor cover assembly ⑫.
- 13) Push the T.S release arm assembly ⑬ in the direction of arrow ⑭ while holding up the M-SW assembly ⑮. And then, push the T main brake assembly ⑯ in the direction of arrow ⑰ and remove the M-SW assembly ⑮.
- 14) Remove solder ⑱ and remove the control motor ⑲.

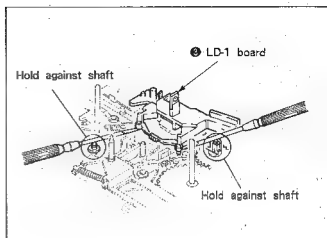


Fig. 7-37.

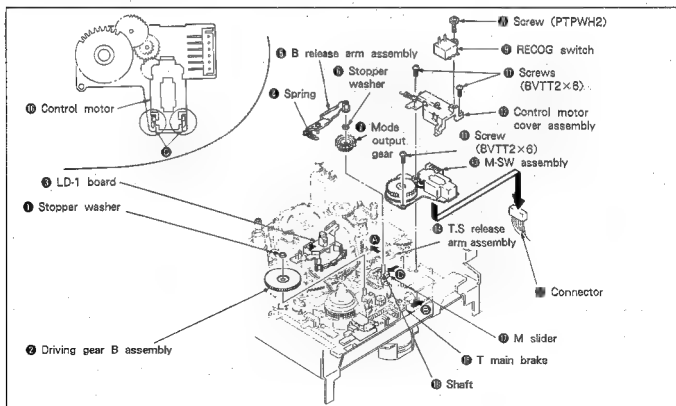


Fig. 7-38.

Mounting (See Fig. 7-38.)

Solder the control motor ⑩.

Mount the M-SW assembly in opposite procedure of 7-3-14. 1. Removal, 13).

Mount the control motor cover assembly ⑪, and tighten with the three screws ⑫.

Connect the connector ⑬.

Solder the terminals of the RECOG switch ⑭ in three places.

Mount the RECOG switch ⑮ and tighten with screw ⑯.

Confirm **EJECT** mode.

Confirm that M slider ① is moved fully in the direction of arrow ②.

Put a half drop of oil on the shaft ③.

- 1) Mount the mode output gear ④ so that the positioning holes are lined up. (See Fig. 7-39.)

11) Fix stopper washer ⑥.

12) Set to **LOADING/UNLOADING** mode.

13) Mount B release arm assembly ⑦ and hook spring ⑧.

14) Mount the lock slider assembly according to 7-3-13. 2. Mounting, 3) to 6).

15) Mount the LD-1 board ⑨.

16) Mount drive gear ⑩ assembly ⑪ and fix stopper washer ⑫.

17) Mount the T reel table assembly according to 7-3-2. 2. Mounting.

18) Connect the CN301 connector (white) 2P to the RS-28 board.

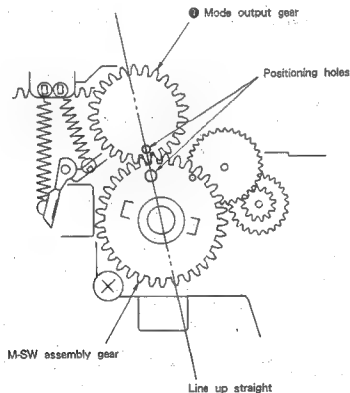


Fig. 7-39.

7-3-15. M Slider

1. Removal (See Fig. 7-40.)

- 1) Remove the S reel table assembly according to 7-3-1. 1. Removal. (See Fig. 7-6.)
- 2) Remove the T reel table assembly according to 7-3-2. 1. Removal. (See Fig. 7-7.)
- 3) Remove the pinch press arm assembly according to 7-3-3. 1. Removal. (See Fig. 7-8.)
- 4) Remove the tension regulator arm assembly according to 7-3-4. 1. Removal. (See Fig. 7-9.)
- 5) Remove the tension regulator band assembly according to 7-3-5. 1. Removal. (See Fig. 7-10.)
- 6) Remove the threading ring assembly according to 7-3-7. 1. Removal. (See Fig. 7-12.)
- 7) Perform 7-3-14. 1. Removal, 1) to 6).
- 8) Remove the tension regulator load arm assembly according to 7-3-11. 1. Removal. 8). (See Fig. 7-30.)
- 9) Remove spring ①.
- 10) Remove the two stopper washers ② and remove the S main brake assembly ③ and the T main brake assembly ④.
- 11) Set to **LOADING TOP** and **LOADING/UNLOADING** modes.
- 12) Remove screw ⑤ and the driving complete assembly ⑥.
- 13) Perform 7-3-14. 1. Removal, 7) and 8).
- 14) Remove the two springs ⑦.
- 15) Remove REW brake assembly ⑧, and remove the REW brake spacer ⑨.
- 16) Remove stopper washer ⑩ and remove the B release slider ⑪.
- 17) Remove stopper washer ⑫, and remove the spring ⑬ and RL arm ⑭.
- 18) Move the M slider ⑮ to the right. (Leave about 5 mm at the left.)
- 19) Remove the E ring ⑯ and remove the pinch press lever assembly ⑰.
- 20) Remove spring ⑱ and remove the hard brake S ⑲.
- 21) Remove stopper washer ⑳, push the mode arm ㉑ in the direction of arrow, and lift up the left side of the M slider ㉒ to remove.

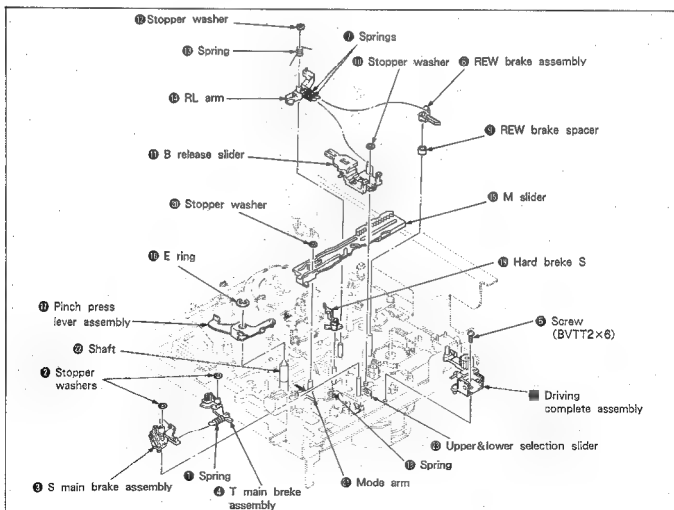


Fig. 7-40.

Mounting (See Fig. 7-40.)

- 1) Grease. (See Fig. 7-41.)
- 2) Push mode arm ④ in the direction of arrow ③, and mount the M slider ⑤, noting the positioning of the other parts as shown in Fig. 7-42, and fix the stopper washer ⑥.
- 3) Mount hard brake S ⑦ and hook spring ⑧.
- 4) Grease. (See Fig. 7-43.)
- 5) Put a half drop of oil from the shaft ⑨ groove to the bottom, mount the pinch press lever assembly ⑩ and insert the E ring ⑪.
- 6) Mount RL arm ⑫, hook the spring ⑬ and fix the stopper washer ⑭.
- 7) Mount B release slider ⑮ and fix stopper washer ⑯.
- 8) Mount REW brak spacer ⑰ and REW brake assembly ⑱.
- 9) Hook the two springs ⑲.

Note: Hook the two springs as follows, being careful not to mix them up.

- B release slider spring: total diameter 2 mm, wire diameter 0.18 mm
- REW brake assembly spring: total diameter 1.6 mm, wire diameter 0.12 mm

- 10) Move the M slider ⑤ to the left fully.
- 11) Set to **EJECT** mode.
- 12) Perform 7-3-14, 2, Mounting, 9), 10) and 11).
- 13) Set to **LOADING/UNLOADING** mode.
- 14) Insert the driving complete assembly ① horizontal shaft into the upper & lower selection slider ② groove and mount with screw ③.
- 15) Mount the T main brake assembly ④ and S main brake assembly ⑤. Fix the two stopper washers ⑥ and hook the spring ⑦.
- 16) Mount the tension regulator load arm assembly according to 7-3-11, 2, Mounting, 2).
- 17) Perform 7-3-14, 2, Mounting, 13) to 18).
- 18) Mount the threading ring assembly according to 7-3-7, 2, Mounting.
- 19) Mount the tension regulator band assembly according to 7-3-5, 2, Mounting.
- 20) Mount the tension regulator arm assembly according to 7-3-4, 2, Mounting.
- 21) Mount the pinch press arm assembly according to 7-3-3, 2, Mounting.
- 22) Mount the T reel table assembly according to 7-3-2, 2, Mounting.
- 23) Mount the S reel table assembly according to 7-3-1, 2, Mounting.

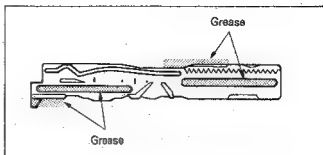


Fig. 7-41.

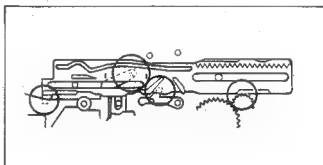


Fig. 7-42.

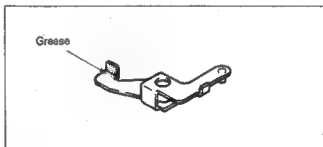


Fig. 7-43.

7-3-16. Capstan Motor Assembly

1. Removal (See Fig. 7-44.)

- 1) Remove the threading ring assembly according to 7-3-7. 1. Removal. (See Fig. 7-12.)
- 2) Remove the screw ① and remove the wire holder ②.
- 3) Remove the screw ③ and remove the gear base ④.
- 4) Remove the flexible connector ⑤.
- 5) Remove the two screws ⑥ and remove the capstan motor assembly ⑦ in the direction of arrow.

2. Mounting (See Fig. 7-44.)

- 1) Mount capstan motor assembly ⑦ and tighten with the two screws ⑥.
- 2) Connect the flexible connector ⑤.
- 3) Mount the gear base ④ and tighten with screw ③.
- 4) Mount the wire holder ② and tighten with the screw ①.
- 5) Arrange the wires using the wire holder.
- 6) Mount the threading ring assembly according to 7-3-7. 2. Mounting. (See Fig. 7-12.)

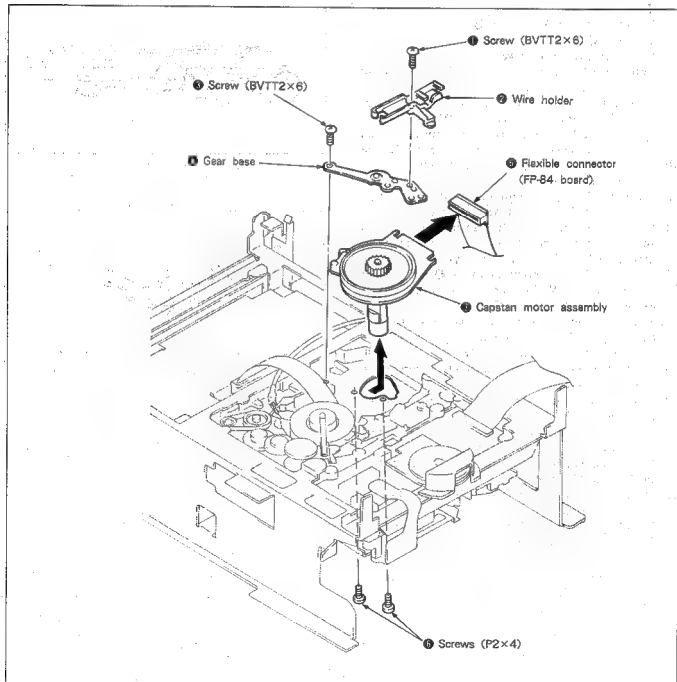


Fig. 7-44.

7-3-17. Replacement of Rotary Upper Drum

1. Removal

- 1) Remove the two hexagonal bolt screws ① and remove the dynamic damper ②. (See Fig. 7-45.)
- 2) Remove all eight solders in section ② and confirm that the board and the pins on the bottom can move freely, using tweezers or the like. (See Fig. 7-45.)
- 3) Remove the two hexagonal bolt screws ③. (See Fig. 7-45.)
- 4) Mount the supplied jig ⑤ (Ref. No. J-10) on the dynamic damper mounting hole with the two supplied screws ④, and mount the supplied hexagonal bolt screw ⑤ on supplied jig ⑤, then remove the rotary upper drum ⑥. (See Fig. 7-46.)

• Repair rotary upper drum assembly
DGR-12-R A-7049-121-A

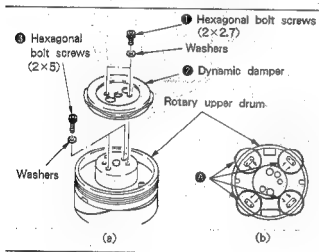


Fig. 7-45.

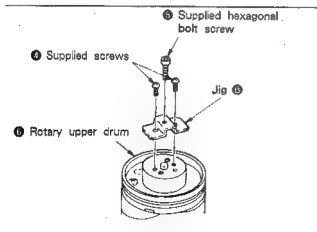


Fig. 7-46.

2. Mounting

- 1) Clean the flange surface and the surface of the rotary upper drum which contacts it, and confirm that there is no dirt or scratches.
- 2) Use jig ⑤ (Ref. No. J-10) to line up rotary upper drum ⑥ and the positioning hole ⑦, and lightly insert the rotary upper drum. At this time, confirm that the pins stick up the hole of rotary upper drum board. Fix with tweezers if the pins catch. (See Fig. 7-47.)
- 3) Remove jig ⑤ and push the rotary upper drum in by hand, lightly. (See Fig. 7-48.) When it is not inserted all the way, tighten the two hexagonal bolt screws ⑧ alternately to temporarily fix it.
- 4) Insert jig ⑤ into the positioning hole ⑦ again and confirm that it goes in smoothly. If not, loosen the two hexagonal bolt screws ⑧ and adjust it by inserting a clock screwdriver into the hole.
- 5) Tighten the two hexagonal bolt screws ⑧.
Note: Be careful not to tighten too much.
- 6) Solder the pins in section ②. (See Fig. 7-45.)
Note: Be careful that the solder does not go under the board.
- 7) Mount the dynamic damper ② with the two hexagonal bolt screws ①. (See Fig. 7-45.)
Note: • Be careful not to tighten too much.
• Be careful not to mix up the hexagonal bolt screws ① (2x2.7) and ③ (2x5).

Note: After mounting, be sure to perform 7-4. TAPE PATH ADJUSTMENT.

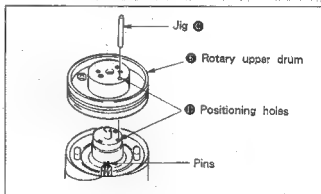


Fig. 7-47.

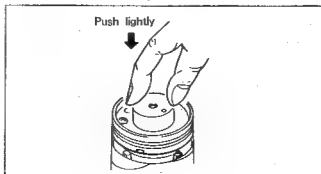


Fig. 7-48.

[Notes on drum assembly and rotary upper drum mounting]

1. When mounting the drum assembly with a magnetized screwdriver, mount with the head tip in the position shown below to prevent it from being affected by the screwdriver.
2. Be sure to perform TAPE PATH ADJUSTMENT after mounting.

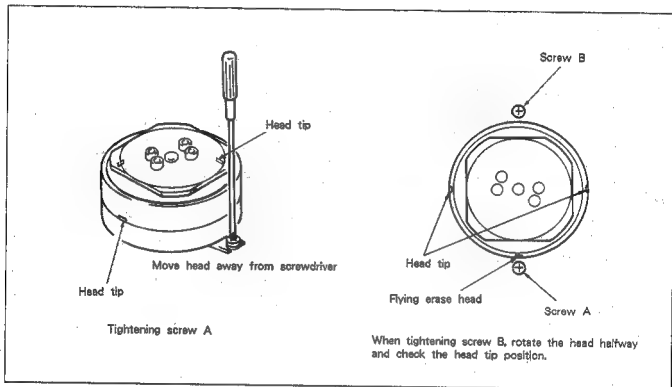


Fig. 7-49.

7-3-18. Replacement of Drum Assembly

1. Removal (See Figs. 7-50. and 7-51.)

- 1) Remove the screw ① and remove the shaft ground terminal ②. (See Fig. 7-50.)
- 2) Remove the flexible connector ③ from the FR-30P board.
- 3) Disconnect the two connectors ④.
- 4) Remove the two screws ⑤ and remove the drum assembly ⑥.

Note: At this time, be careful that the drum assembly does not hit No.3 guide, etc.

2. Mounting (See Figs. 7-50. and 7-51.)

- 1) Mount the drum assembly ⑥ and tighten with the two screws ⑤.
- 2) Connect the flexible connector ③ to the FR-30P board.
- 3) Connect the two connectors ④.
- 4) Mount the shaft ground terminal ② and tighten with the screw ①.

Note: Be sure to perform 7-4. TAPE PATH ADJUSTMENT after mounting.

• Repair drum assembly
DGH-12D-R A-7048-102-A

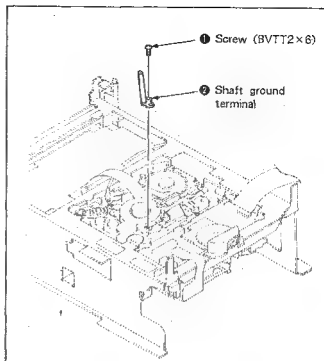


Fig. 7-50.

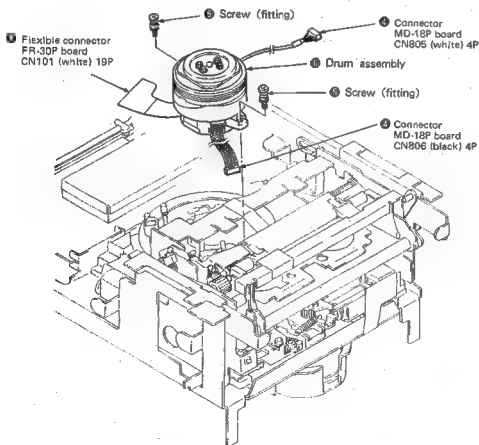


Fig. 7-51.

7-3-19. Adjustment after Replacement of No.3 Guide and No.4 Guide

For replacement of both No.3 and No.4 guides, line up the tape along the upper flange after replacing. (See Fig. 7-91.)

7-3-20. No.5 Guide Assembly

1. Removal (See Fig. 7-52.)

- 1) Remove the three screws ① and remove the No.5 guide assembly.
- 2) Remove the guide nut ⑦ and remove No.5 guide boss ④.
- 3) Remove the No.5 guide flange ⑤, No.5 guide ⑥ and spring ③.

2. Mounting (See Fig. 7-52.)

- 1) Mount the spring ③, No.5 guide ⑥ and No.5 guide flange ⑤ with No.5 guide shaft ⑦.
- 2) Mount the No.5 guide boss ④ and tighten the guide nut ⑦.
- 3) Mount the No.5 guide assembly and tighten with the three screws ①.

Note: Be sure to perform 7-4. TAPE PATH ADJUSTMENT after mounting.

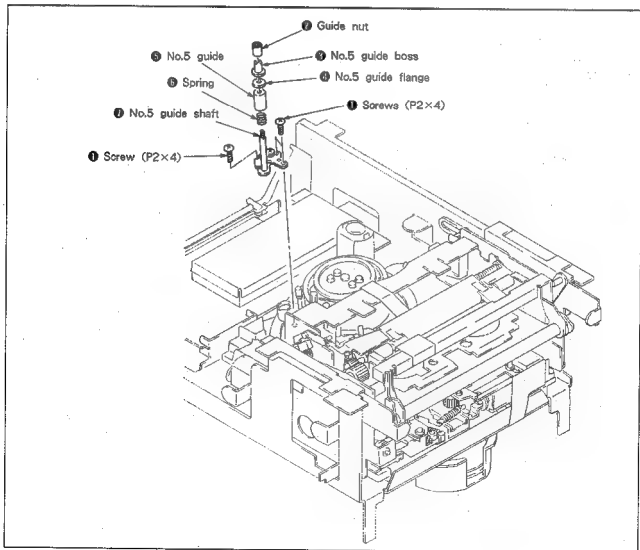


Fig. 7-52.

7-3-21. FWD Back Tension Adjustment
(See Fig. 7-53.)

- 1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-15.
- 2) Set to **LOADING END**, **FWD** mode.
- 3) Loosen band adjustment plate ① screw ② and adjust as shown by arrow ③ so that the tension regulator arm assembly slit ④ and tension regulator arm assembly pin ⑤ are positioned as shown, and tighten screw ②.
- 4) Place tension measurement reel (Ref. No. J-7) ⑥ on the S reel table assembly ⑦ and fix the tape along No.1 guide, No.2 guide, No.3 guide and the drum.
- 5) Pull dial tension gauge (Ref. No. J-6) ⑧ in the direction of arrow ⑨ and hook the spring ⑩ onto the tension regulator spring hook assembly ⑪ so that the value becomes 12.5 ± 1 g, as shown below.
Value too large: arrow ⑩ direction
Value too small: arrow ⑪ direction

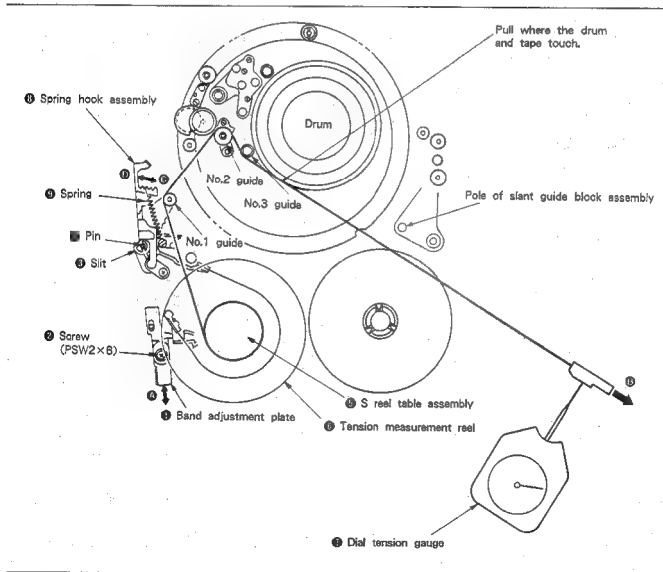


Fig. 7-53.

7-3-22. Mounting of Block Plate (See Fig. 7-54.)

- 1) Push the lock slider ① in the direction of arrow and lift up the cassette holder ②.
- 2) Confirm that the lock lever ③ is at the position shown in Fig. A in relation to Pin ④.
- 3) Rotate the worm gear ⑤ in the direction of arrow A, so that gear B ⑥ and gear C ⑦ are engaged.
- 4) Tighten the three screws ⑧ of the block plate sub assembly ⑨ and the bracket (LEFT) ⑩ while confirming that Pin ⑥ of the gear lever assembly is in position shown in Fig. B in relation to lock lever ③.
- 5) Confirm that gear C ⑦ and gear D ⑪ are engaged.

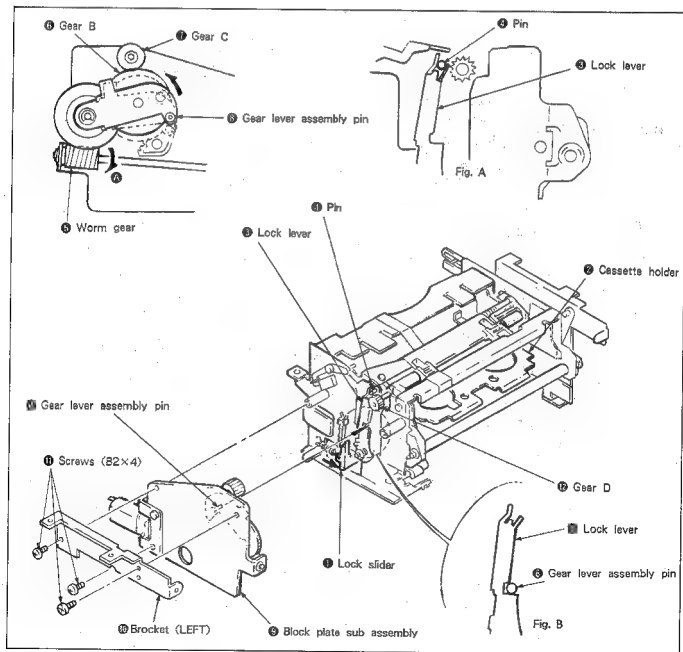


Fig. 7-54.

7-3-23. Adjustment of Cassette Holder Section Twistin (See Fig. 7-55.)

• Perform this adjustment when the following symptoms occur :

Symptoms: The cassette comes into contact with the holder assembly ④ or joint assembly ⑤, etc., when inserted or ejected, and does not move smoothly.

- 1) Remove the cassette compartment assembly according to Section 2, DISASSEMBLY 2-15.
- 2) Remove the two screws ① and remove the bracket (RIGHT) ②.
- 3) Loosen screw ③.
- 4) Adjust so that there is no gap between cassette holder assembly ④ and reinforcement ⑤ (section ⑥, section ⑥).
- 5) Tighten screw ③.
- 6) Apply a screw locking compound to screw ③.
- 7) Mount the cassette bracket (RIGHT) ② and tighten with two screws ①.
- 8) Mount the cassette compartment assembly in opposite procedure of Section 2, DISASSEMBLY 2-15.

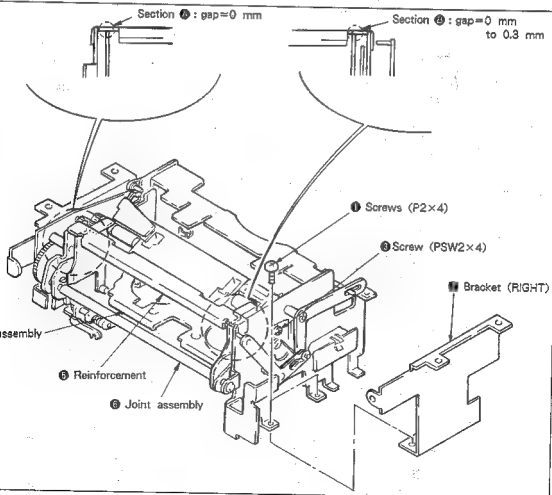


Fig. 7-55.

7-3-24. Check of S and T Main Brake Torque

- 1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-15.

1. S main brake torque (See Figs. 7-56, and 7-57.)

- 1) Set to **FF/REW** mode.
- 2) Place the tension measurement reel (Ref. No. J-8) on the S reel table.
- 3) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

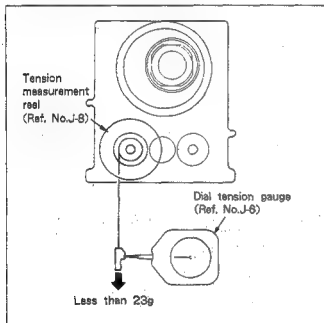


Fig. 7-56.

2. T main brake torque (See Figs. 7-58, and 7-59.)

- 1) Set to **FF/REW** mode.
- 2) Place the tension measurement reel (Ref. No. J-8) on the T reel table.
- 3) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

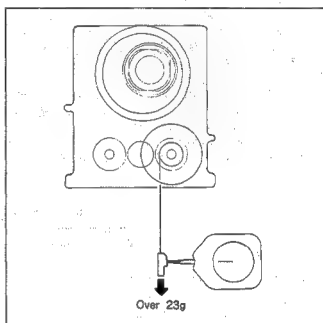


Fig. 7-58.

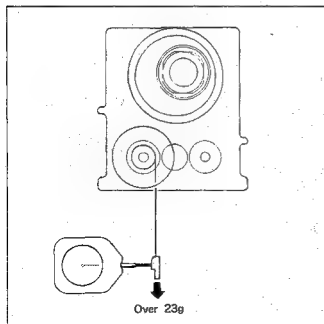


Fig. 7-57.

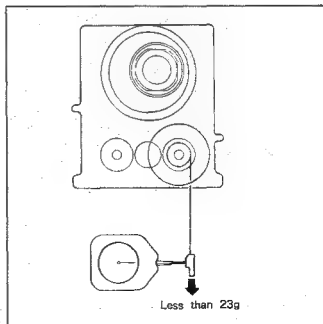


Fig. 7-59.

7-3-25. Check of S and T Soft Brake Torque

- 1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-15.

1. S soft brake torque (See Fig. 7-60.)

- 1) Set to **FF/REW** mode.
- 2) Place the tension measurement reel (Ref. No. J-8) on the S reel table.
- 3) Release the S main brake with a finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

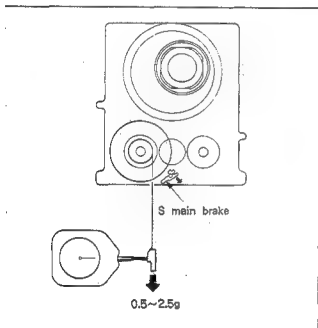


Fig. 7-60.

2. T soft brake torque (See Fig. 7-61.)

- 1) Set to **REV** mode.
- 2) Place the tension measurement reel (Ref. No. J-8) on the T reel table.
- 3) Release the T main brake with a finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

Note: In REV mode, both T soft brake and REW brake are operated.

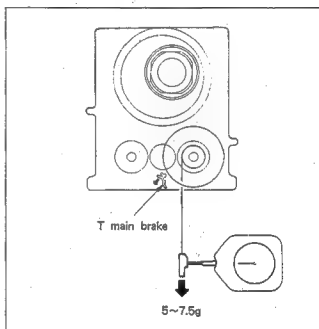


Fig. 7-61.

7-3-26. Check of REV and REW Brake Torque

- 1) Remove the cassette compartment assembly according to Section 2. DISASSEMBLY 2-15.

1. REV brake torque (See Fig. 7-62.)

- 1) Set to **REV** mode.
- 2) Place the tension measurement reel (Ref. No. J-8) on the S reel table.
- 3) Release the S main brake with a finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) in the direction of the arrow and confirm that the specifications are satisfied.

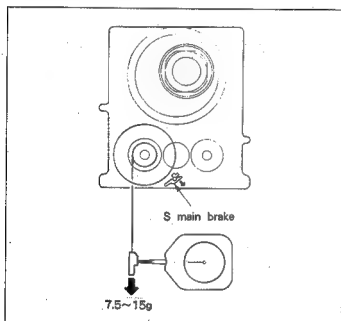


Fig. 7-62.

2. REW brake torque (See Fig. 7-63.)

- 1) Set to **FF/REW** mode.
- 2) Place the tension measurement reel (Ref. No. J-8) on the T reel table.
- 3) Release the T main brake with a finger.
- 4) Pull the dial tension gauge (Ref. No. J-6) in the direction of arrow and confirm that the specifications are satisfied.

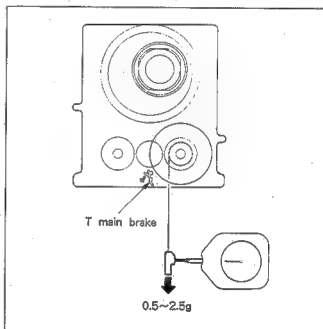


Fig. 7-63.

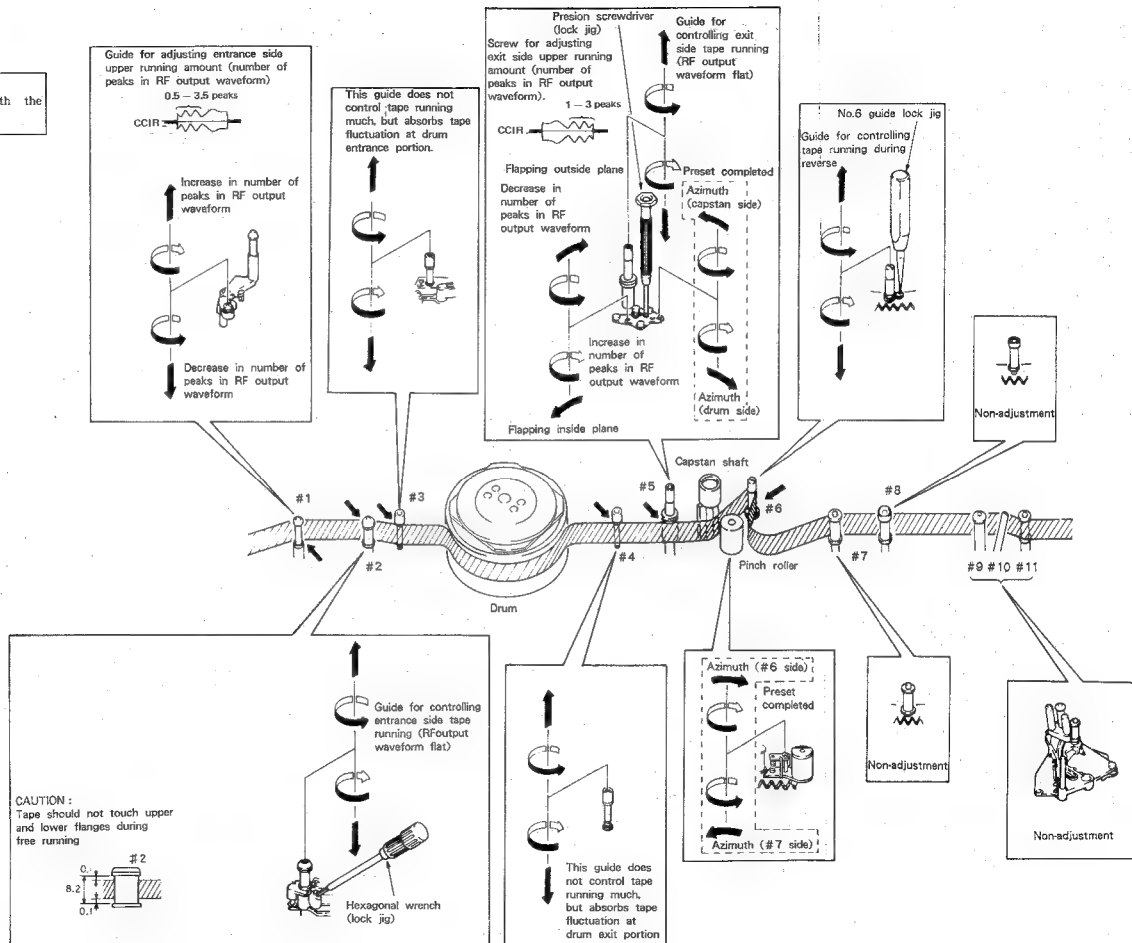
7-3-27. Check by FWD and RVS Winding Torque Cassette

- 1) Insert the FWD and RVS winding torque cassette (Ref. No. J-12).
- 2) Set to playback mode and confirm that T reel table torque is 9.5 to 15.5 g·cm.
- 3) Set to playback mode and confirm that the S reel table torque immediately after the REW button is pressed is 17 to 23 g·cm.
- 4) Replace the appropriate reel table if the above specifications are not satisfied.

TAPE RUNNING SYSTEM DIAGRAM

Precautions on Adjustment :

Be sure to perform this adjustment with the mechanism and lower case assembled.



- Perform this adjustment after confirming that Section 8. ELECTRICAL ADJUSTMENT is completed.

[REGARDING TRACK SHIFT JIG]

The 8 mm video system employs a high precision tracking ATF (auto track finding) which instantaneously controls the tape running speed with the four kinds of pilot signals. In this way, the tracking adjustment knob becomes unnecessary, and accurate tracing has become possible.

On the other hand however, there has been difficulty in adjusting the tape path system with the ATF method, that is it was impossible to make a perfect adjustment because the ATF automatically corrected even small head-tracing errors.

Because of this, adjustment is carried out to the tape path system by using the track shift jig (Ref. No. J-6080-891-A). As the track shift jig forcibly releases the ATF and sets the tracking amount (track shift) manually, the adjustment of the tape path system can easily be carried out.

- Previous track shift & monitor jig (J-6080-851-A) also can be used. Be sure to use the specified connector.

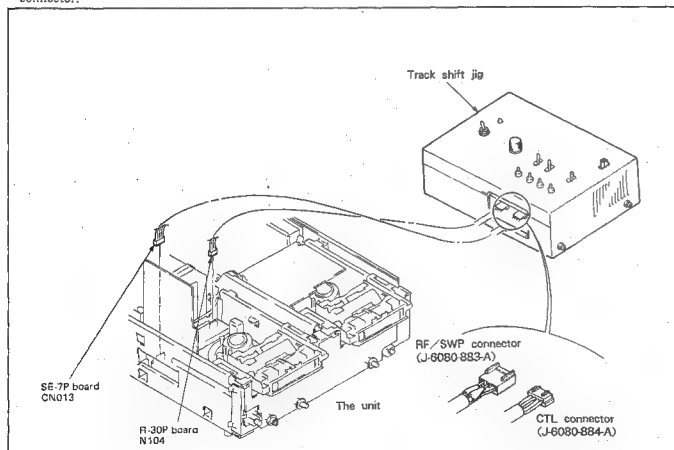


Fig. 7-64. Connection of track shift jig

7-4-1. Connection of Track Shift Jig

[Connector connections]

For connection, use the connection cord (Ref. No. J-15, J-16).

Connect track shift jig to the unit referring to Fig. 7-64.

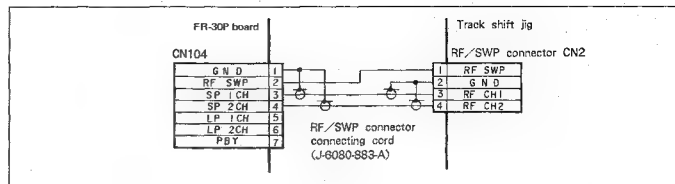
- RF/SWP connector.....FR-30P board CN104

- CTL connector.....SE-7P board CN013

(For details, see the Instruction Manual of Track Shift Jig.)

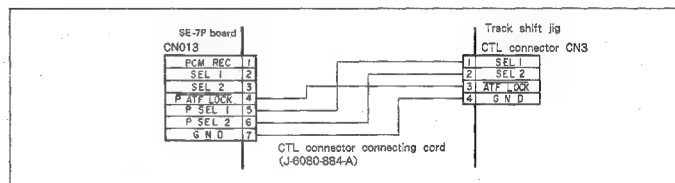
[Designated connecting cord]

- RF/SWP connector connecting cord
(Part cord : J-6080-883-A)



- CTL connector connecting cord

(Part cord : J-6080-884-A)



[Position setting of respective switches]

SEL switch.....When performing track shift, set to ON. At OFF position it becomes control of the unit side.

PATTERN switch.....Set to EV side.

ATF ADJ.....Set to OFF side.

Other switches are not used when adjusting the unit.

7-2. Preparation for Adjustment

- 1) Perform cleaning of the tape running surface (the individual tape guides, drum, capstan shaft and pinch roller).
- 2) Connection of oscilloscope
 1ch : CH2 checking pin of track shift jig
 2ch : RF SWP checking pin of track shift jig
- 3) Set the SEL switch of the track shift jig to OFF, then playback the alignment tape (WR5-1C) for tracking, and confirm that the RF waveform of both the entrance and exit sides become flat (Fig. 7-65. Ⓐ).

If the RF waveform of both sides is not flat, the adjustment should be carried out as described below.

- In case the RF waveform on the entrance side is not flat (Fig. 7-65. Ⓑ)
Perform the adjustment according to 7-4-8. Entrance Side Adjustment.
- In case the RF waveform on the exit side is not flat (Fig. 7-65. Ⓒ)
Perform the adjustment according to 7-4-4. Exit Side Adjustment.

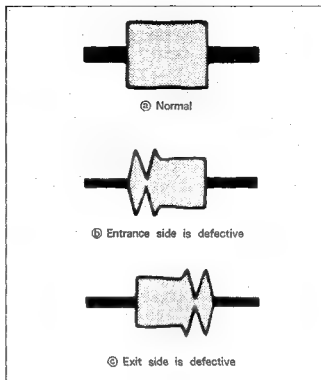


Fig. 7-65.

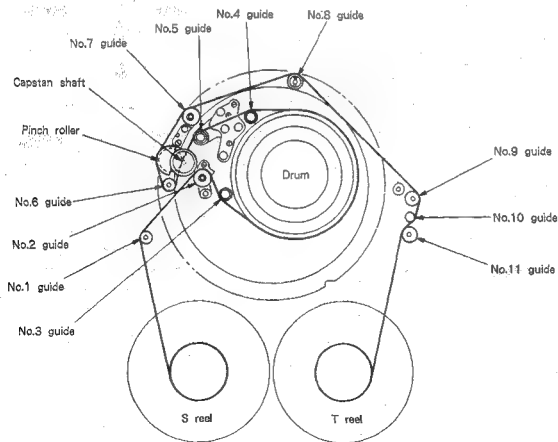


Fig. 7-66. Tape guide arrangement diagram

7-4.3. Entrance Side Adjustment

- 1) Play back the alignment tape (WR5-1C) for tracking and loosen No.2 guide lock screw ①, and rotate No.2 and No.3 guides counterclockwise to free tape running on the entrance side (See Fig. 7-67.)

Note: Since the space between the top and bottom flanges of No.2 guide is narrow, confirm that the tape is touching neither top nor bottom flanges at this point. Note that if No.2 guide is loosened too much, the tape touches the bottom flange and the RF waveform on the entrance side exceeds the original free waveform.

- 2) Confirm that the RF waveform on the entrance side has 0.5 to 3.5 peaks in this condition. If not, adjust as follows. (See Fig. 7-68.)

<less than 3.5 peak>

Adjust the height adjustment screw of No.1 guide (tension regulator arm assembly) by turning it clockwise 90° at a time. (See Fig. 7-69.)

<more than 6 peaks>

Adjust the height adjustment screw of No.1 guide (tension regulator arm assembly) by turning it counterclockwise 90° at a time. (See Fig. 7-69.)

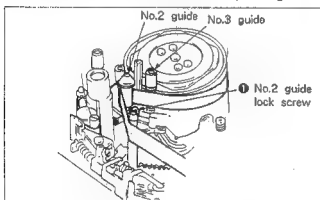


Fig. 7-67.

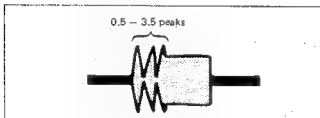


Fig. 7-68.

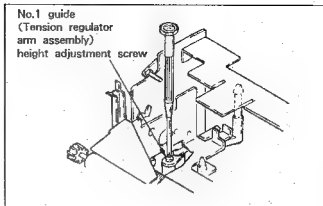


Fig. 7-69.

- 3) Slowly rotate the No.2 guide clockwise to make the entrance side waveform approximately flat. (Fig. 7-70.)

Note: Do not rotate No.2 guide excessively.

- 4) Set the SEL switch of the track shift jig to ON, then turn the track shift knob until the RF waveform amplitude becomes $2/3$. (See Fig. 7-71.)

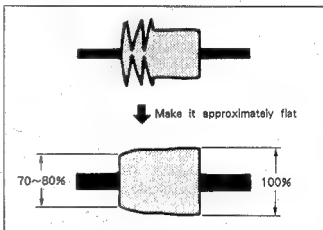


Fig. 7-70.

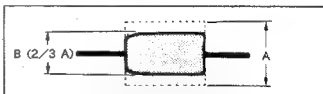


Fig. 7-71.

- 5) Raise the entrance side waveform slightly by rotating No.2 guide. (See Fig. 7-72.)
- 6) Flatten the waveform with No.3 guide. (See Fig. 7-73.)
- 7) Tighten No.2 guide lock screw ①. (See Fig. 7-67.)

Note: Be sure to perform checking in accordance with 7-4-5. Checking after Adjustment.

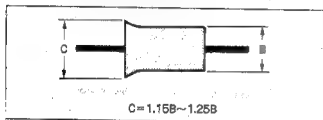


Fig. 7-72.

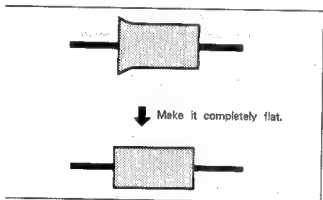


Fig. 7-73.

7-4-4. Exit Side Adjustment

- 1) Play back the alignment tape (WR5-1C) for tracking and rotate No.4 guide and No.5 guide counterclockwise in order to make the tape running on the exit side free. (See Fig. 7-74.)

Note: • If the No.5 guide nut does not loosen (it is locked with screw-paint), dissolve the paint with alcohol.

• Confirm that the tape is not touching the top and bottom of flanges of No.5 guide during free tape running.

- 2) Confirm that the RF waveform on the exit side has 1 to 3 peaks. If not, readjust as follows. (See Fig. 7-75.)

(If off standard)

- i) Rotate the lock screw ① counterclockwise to loosen.
- ii) Slowly rotate the zenith screw ② 45° at a time and wait until the RF waveform varies.
- iii) Rotate the lock screw ① clockwise to tighten. (See Fig. 7-74.)

Note: • The waveform varies if the lock screw is tightened too strongly. Tighten moderately.
• Never rotate the azimuth screw of No.5 guide.

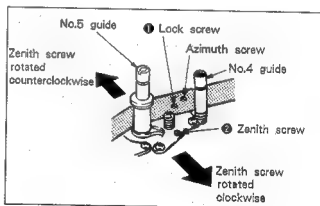


Fig. 7-74.

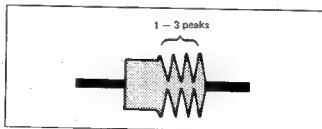


Fig. 7-75.

- 3) Rotate the No.5 guide clockwise to make the RF waveform on the exit side approximately flat. (Fig. 7-76.)

Note: The waveform reaction is slow against nut rotation. Rotate the nut after the waveform variations are stabilized.

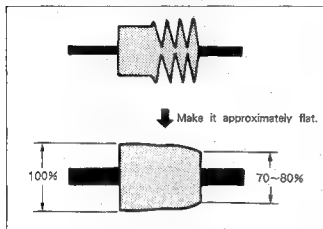


Fig. 7-76.

- 4) Set the SEL switch of the track shift jig to ON, then turn the track shift knob until the RF waveform amplitude becomes $2/3$. (See Fig. 7-77.)
- 5) Raise the exit side waveform slightly by rotating No.5 guide. (See Fig. 7-78.)
- 6) Turn No.4 guide so that waveform is flat. (See Fig. 7-79.)

Note: Be sure to perform checking in accordance with 7-4-5. Checking after Adjustment.

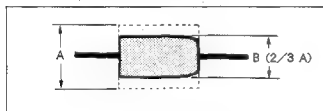


Fig. 7-77.

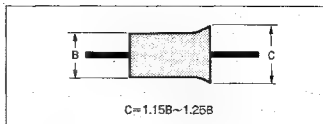


Fig. 7-78.

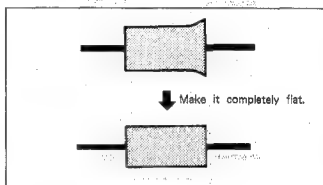


Fig. 7-79.

7-5. Checking after Adjustment

1. Tracking check
 - 1) Play back the alignment tape (WR5-1C) for tracking.
 - 2) Set the SEL switch of the track shift jig to ON, and turn the track shift knob, until the RF waveform amplitude becomes $2/3$. (See Fig. 7-80.)
 - 3) Confirm that the RF waveform amplitude minimum value (E_{MIN}) at this time is more than 75% of maximum value (E_{MAX}). (See Fig. 7-81.)
 - 4) Confirm that the fluctuation amount of both RF waveform entrance and exit sides is as shown in Fig. 7-82.
 - 5) Set the SEL switch of the track shift jig to OFF.
 - 6) Set to the REV mode and confirm that the waveform noise pitches are uniform. If not, adjust as follows. (See Fig. 7-83.)

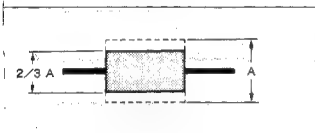


Fig. 7-80.

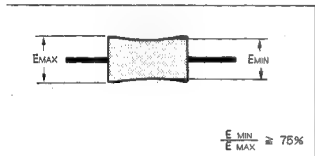


Fig. 7-81.

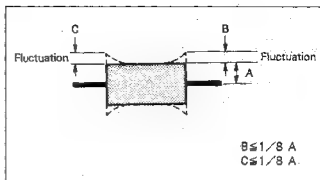


Fig. 7-82.

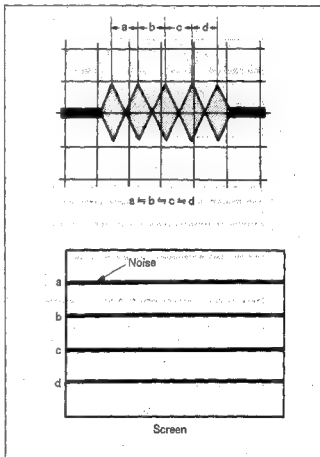


Fig. 7-83.

(Narrow noise pitch on entrance side (upper screen))
(See Fig. 7-84.)

Confirm that the RF waveforms are flat in the PLAYBACK mode.

Waveform is not flat:

Perform height adjustment of No.2 guide and No.3 guide according to 7-4-3. Entrance Side Adjustment.

Waveform is flat:

Confirm again by performing No.1 guide height and No.2 guide zenith adjustment according to 7-4-3. Entrance Side Adjustment.

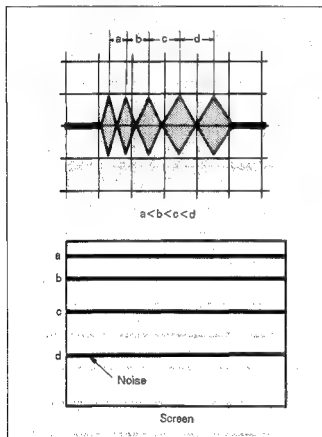


Fig. 7-84.

(Narrow noise pitch on exit side (lower screen))
(See Fig. 7-85.)

Set to the PLAYBACK mode and perform height adjustment of No.4 guide and No.5 guide according to 7-4-4. Exit Side Adjustment.

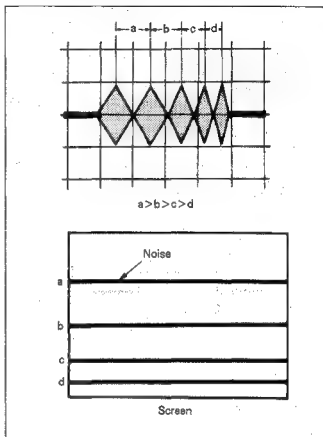


Fig. 7-85.

(Wide noise pitch on exit side (lower screen))

(See Fig. 7-86.)

Set to the PLAYBACK mode and confirm that the RF waveform is flat.

Waveform is not flat:

Perform height adjustment of No.4 guide and No.5 guide according to 7-4-4, Exit Side Adjustment.

Waveform is flat:

Rotate the guide lower toothed wheel counterclockwise with No.6 guide lock jig (Ref. No. J-11) to loosen, and rotate No.6 guide counterclockwise 45° to tighten the lower toothed wheel. Confirm the RF waveform of the REV mode again. (See Fig. 7-87.)

Note: If No.6 guide is raised too much, wrinkles may occur in section A between the capstan shaft and No.5 guide. Confirm that no wrinkles are occurring. (See Fig. 7-88.)

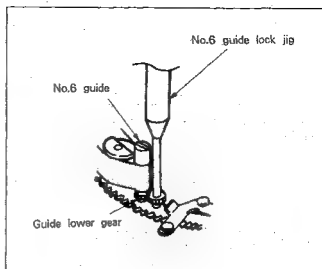


Fig. 7-87.

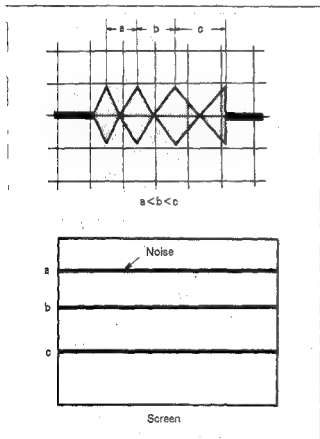


Fig. 7-86.

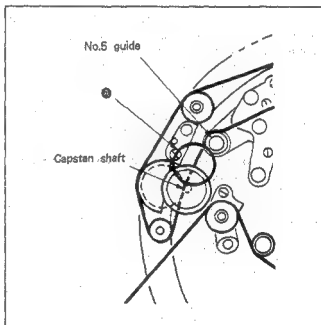


Fig. 7-88.

2. Checking rising edge

- 1) Confirm that the RF waveform rises horizontally during playback after finishing loading, after CUE /REV, and during playing back after FF. If not, adjust as follows.

(In case noise occurs on the exit side (lower screen) at rising of playback after completing loading)
(See Fig. 7-89.)

Confirm that the FWD back tension is not too low.
If too low:
Readjust according to 7-3-21. FWD Back Tension Adjustment.

If normal:
Rotate the azimuth screw of the pinch roller clockwise 5° at a time and adjust while rechecking the rising edge. (See Fig. 7-90.)

(In case noise occurs on the exit side (lower screen) at rising of playback after REV)
(See Fig. 7-89.)

Loosen the guide lower toothed wheel of No.6 guide using No.6 guide lock jig, rotate No.6 guide 90° counterclockwise to tighten the guide lower toothed wheel, then recheck the rising edge.

Note: If No.6 guide is raised too much, wrinkles may occur between the capstan shaft and No. 5 guide (in section ② of Fig. 7-88.). Confirm that no wrinkles are occurring.

(In case noise occurs on the exit side (lower screen) at rising of playback after FF)
(See Fig. 7-89.)

Confirm that the FWD back tension is not too low.
If too low:
Readjust according to 7-3-21. FWD Back Tension Adjustment.

If normal:
Rotate the azimuth screw of the pinch roller clockwise approx. 5° at a time and adjust while checking the rising edge. (See Fig. 7-90.)

Note: After finishing adjustment, be sure to check rising of playback following to completion of loading.

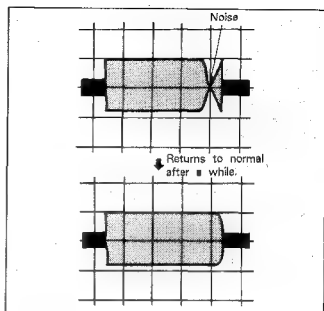


Fig. 7-89.

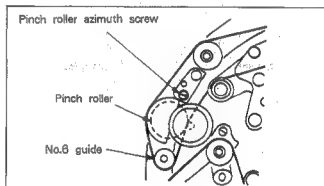


Fig. 7-90.

3. Tape running check

In playback and REV modes, confirm the following for the flange sections (arrows in Fig. 7-91.) of guides No.1 to 6: there should be no gaps and the tape should not be curled more than 0.3 mm at tape guides No.1, 2 and 5, and there should be neither gaps nor curls at guides No.3, 4 and 6.

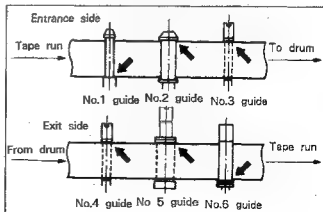


Fig. 7-91.

SECTION 8

ELECTRICAL ADJUSTMENT

For adjustment, refer to the parts arrangement diagram for adjustment on page 344.

The following measuring equipments are used for electrical adjustment:

Equipment to be used]

- 1) TV monitor
- 2) AC pack
- 3) Dual trace oscilloscope of over 10 MHz band which incorporates delay mode (use a 10 : 1 probe unless otherwise specified)
- 4) Frequency counter
- 5) Pattern generator incorporates video output terminal
- 6) Digital voltmeter
- 7) Audio generator
- 8) Audio level meter
- 9) Audio distortion meter
- 0) Audio attenuator
- 1) Alignment tapes

For tracking adjustment (WR5-1C)

Part number: 8-967-995-06

For video frequency response adjustment (WR5-6C)*1

Part number: 8-967-995-17

For operation check (WR5-4CL)*2

Part number: 8-967-995-56

For operation check (WR5-5CSP)*3

Part number: 8-967-995-47

Precautions for adjustment]

The player side must sometimes be set to recording mode for adjustment. In this case, proceed as follows:

1. Connect Pin ① (LINE IN) of CN004 on the DM-24 board to Pin ① (VIDEO IN) of CN103 on the HK-3 board on the player side with a jumper, and input the external video signal.
2. Connect Pin ② (EXT/INT) of CN103 on the HK-3 board on the player side to Pin ③ (REG 5V) of CN102 with a jumper, and select the external input signal.

After this, press the player MB-9P board REC button (S007) and PB button (S002), and the player will enter the recording mode. When performing adjustments by recording and playing back on the same unit, use a new tape or one erased with an eraser.

- WR5-2C (8-967-995-16) is also available.
- WR5-3CL (8-967-995-36) is also available.
- WR5-4CSP (8-967-995-46) is also available.

[Connections of equipment]

Unless otherwise indicated, connect measuring devices as shown below.

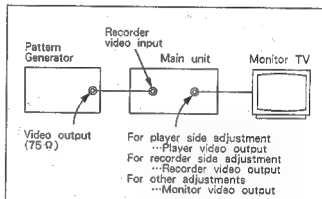


Fig. 8-1.

[Setting up for adjustment]

Video signals output by a pattern generator are used as adjustment signals when adjusting the video section, and these video output signals should be within the required standard. Connect an oscilloscope to J037 on the JB-1P board. Confirm that the amplitudes of video signal SYNC signals, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3 V respectively, and that the level ratio of the burst signals and "red" signals are 0.3 : 0.66. Fig. 8-2 shows video signals (colour bars) used in the video section adjustments.

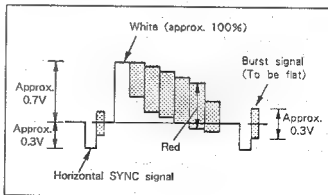
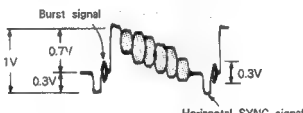
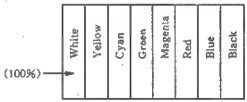


Fig. 8-2. Pattern generator colour bar signals

[Alignment tape]

Tape	Content	Use									
Tracking (WR5-1C)	1. Recording area : PCM--video 2. Recording content : CH2 : 1MHz linearity adjustment signal (CH1 : 9MHz)	Drum linearity adjustment									
Video Frequency Characteristics (WR5-6C)	1. Recording area : Video 2. Recording content : RF sweep 0 to 10MHz 3. Maker : 1, 3.58, 5.5 and 7MHz	Frequency characteristics adjustment									
Operation Check SP mode (WR5-5CSP) LP mode (WR5-4CL)	<p>1. Recording area : Video 2. Recording content :</p> <p>■ Video track</p> <ul style="list-style-type: none"> • Video signals : Color bars 4min Monoscope 4min <p>(Colour bars)</p>   <ul style="list-style-type: none"> • Audio signals (AFM) 400Hz 60% modulation <p>■ PCM area (WR5-5CSP only)</p> <ul style="list-style-type: none"> • Audio signals (PCM) <table border="0"> <tr> <td>1kHz</td> <td>4min color bar section</td> <td rowspan="4">} Iterative</td> </tr> <tr> <td>20Hz</td> <td>20sec</td> </tr> <tr> <td>400Hz</td> <td>20sec</td> </tr> <tr> <td>14kHz</td> <td>20sec</td> </tr> </table>	1kHz	4min color bar section	} Iterative	20Hz	20sec	400Hz	20sec	14kHz	20sec	Operation check
1kHz	4min color bar section	} Iterative									
20Hz	20sec										
400Hz	20sec										
14kHz	20sec										

Note :
PCM area is not included in WR5-4CL

[Input/output level and impedance]

Video input BNC connector
Input signal: 1 Vp-p, 75Ω unbalanced, negative SYNC

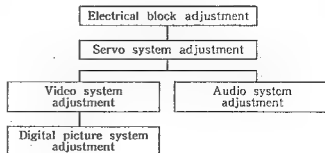
Video output BNC connector
Output signal: 1 Vp-p, 75Ω unbalanced, negative SYNC

Recorder audio input Pin jack
Input level : -10 dBs
(0 dBs=0.775 Vrms)
Input impedance: 47 kΩ or more

Player audio output Pin jack
Specified output : -10 dBs
Output impedance: 2.2 kΩ or less

[Adjustment procedure]

Perform adjustment in the following order:



8-1. POWER SUPPLY BLOCK ADJUSTMENT

8-1-1. UNSW 5V Adjustment (Power Supply Block)

Mode	Standby (power OFF)
Measurement Point	Pin ② of CN006 on IG-1 board
Measuring Instrument	Digital voltmeter
Adjusting Element	RV203
Specified Value	5.30 ± 0.1 Vdc

Adjusting method :

- 1) Adjust to 5.3 ± 0.1 Vdc with RV203

8-1-2. REG 5V and REG 9V Adjustment (Power Supply Block)

Mode	Stop (power ON)
Measuring Instrument	Digital voltmeter
REG 5V adjustment	
Measurement Point	Pin ③ of CN006 on IG-1 board
Adjusting Element	RV202
Specified Value	5.2 ± 0.1 Vdc
REG 9V adjustment	
Measurement Point	Pin ④ of CN006 on IG-1 board
Adjusting Element	RV201
Specified Value	9.0 ± 0.1 Vdc

Adjusting method :

- 1) Adjust to the specified values with the corresponding adjusting elements.

1-3. Power Supply Voltage Check (IG-1P Board)

Mode	Stop (power ON)
Measuring Instrument	Digital voltmeter
DIGITAL 5V check	
Measurement Point	Pin ④ of CN006
Specified Value	5.2 ± 0.2 Vdc
REG -9V check	
Measurement Point	Pin ⑦ of CN006
Specified Value	-9.0 ± 0.1 Vdc
DRIVE 9V check	
Measurement Point	Pin ⑧ of CN006
Specified Value	9.0 ± 0.2 Vdc

Checking method :

- 1) Confirm that each power supply voltage is within the specified value.

8-2. SERVO SYSTEM ADJUSTMENT

8-2-1. DS Clock Check (SE-7P Board)

Mode	Stop
Signal	Arbitrary
Measurement Point	TP201 (4.43 : Pin ⑤ of IC204)
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Level: 2.5 Vp-p and over Frequency: 4432400 \pm 300 Hz

Checking method :

- 1) Confirm that oscillation frequency and level are within the specified values.

8-2-2. ATF to Check (SE-7P Board)

Mode	Stop
Signal	Arbitrary
Measurement Point	Pin ② of IC205
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Level: 4 Vp-p and over Frequency: 5859375 \pm 3000 Hz

Checking method :

- 1) Confirm that oscillation frequency and level are within the specified values.

8-2-3. Reel FG Adjustment (MD-18P Board)

Mode	Playback
Signal	Tape recorded in LP mode
Measurement Point	TP901 (REEL FG: Pin ⑤ of IC903)
Measuring Instrument	Frequency counter
Adjusting Element	RV901
Specified Value	21.0±1.0 Hz

Adjusting method:

- 1) Adjust to 21.0±1.0 Hz with RV901.
- 2) Connect the digital voltmeter to TP902 (V.S) and confirm that the reel motor drive voltage is between 1.0 and 1.4 Vdc. 'dc.
- 3) Check REEL FG frequency and VS voltage for each mode as shown in the table below, then adjust RV901 if required.

Mode	REEL FG (TP901)	V.S (TP902)
CUE (×9)	55 to 66 Hz	1.7 to 2.3 Vdc
HI CUE (×19)	94 to 108 Hz	2.5 to 3.2 Vdc
REVIEW (×7)		1.5±0.15 Vdc
HI REVIEW (×17)		1.78±0.15 Vdc

Table 8-1.

8-2-4. Drum Free Speed Adjustment (SE-7P Board)

Mode	Recording
Signal	Arbitrary
Measurement Point	TP213 (ADE: Pin ⑤ of IC212)
Measuring Instrument	Digital voltmeter
Adjusting Element	RV202
Specified Value	1.90±0.1 Vdc

Adjusting method:

- 1) Adjust to 1.90±0.1 Vdc with RV202.

8-2-5. Capstan Free Speed Adjustment (SE-7P Board)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	TP202 (CAP FG: Pin ⑤ of IC204)
Measuring Instrument	Frequency counter
Adjusting Element	SP mode: RV206 (SP FREE) LP mode: RV208 (LP FREE)
Specified Value	SP mode: 1341±1 Hz LP mode: 670±1 Hz

Connections:

- 1) Connect TP230 (PB ATF: Pin ① of IC701) to GND with an electrolytic capacitor (100 μF/10V) (connect GND to the negative side of the capacitor).
- 2) Connect TP240 (ATF LOCK: Pin ② of IC701) to GND with a jumper.

Adjusting method:

Adjusting elements for LP mode are shown in [].

- 1) For LP mode adjustment, connect Pin ⑤ (REC MODE SP/LP) of CN003 to GND with a jumper.
- 2) Turn power ON.
- 3) Set the playback mode and adjust to 1341±1 Hz [670±1 Hz] with RV206 [RV208].

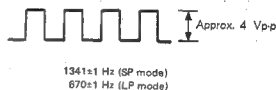


Fig. 8-3.

8-2-6. Switching Position Adjustment (SE-7P Board)

Mode	Playback
Signal	Alignment tape : For operation confirmation (WR5-5CSP)
Measurement Point	CH1 : TP103 on HK-3 board (LINE OUT : Pin ⑤ of CN103) CH2 : TP207 (SV RF SW : Pin ② of IC204)
Measuring Instrument	Oscilloscope
Adjusting Element	RV201
Specified Value	$6.5 \pm 0.3H$ ($416 \pm 19 \mu\text{sec}$)

Adjusting method :

- Adjust to $6.5 \pm 0.3H$ ($416 \pm 19 \mu\text{sec}$) with RV201.

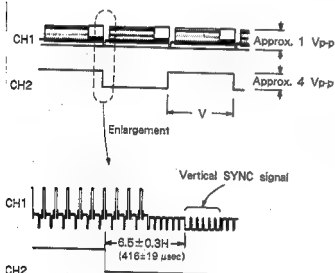


Fig. 8-4. Switching position adjustment

8-2-7. Tracking Adjustment (SE-7P Board)

Mode	Playback
Signal	Self-recorded tape in SP mode
Measurement Point	Pin ② of CN006 (PB V RF)
Measuring Instrument	Oscilloscope
Adjusting Element	RV210 (TRACK)
Specified Value	Maximum RF signal level

Adjusting method :

- Adjust RV210 so that PB V RF signal level is maximum.
- Play back in reverse direction at normal speed a tape self-recorded on the same unit in LP mode, and confirm that no noise appears on the monitor screen at the head switching position (turn RV210 if necessary).

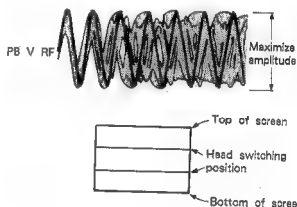


Fig. 8-5.

8-2-8. ATF BPF Balance Adjustment (SE-7P Board)

Mode	Forward $\times 2$ playback (LP)
Signal	Alignment tape : For operation confirmation (WR5-4CL)
Measurement Point	Confirm on the monitor TV screen.
Measuring Instrument	
Adjusting Element	RV701 (ATF BAL)
Specified Value	No noise on the screen

Adjusting method :

- 1) Press the $\times 2$ button (S014 on MB-9P board), and set to the forward direction $\times 2$ playback mode.
- 2) Turn RV701 so that noise appears on the monitor screen lower part.
- 3) Turn RV701 clockwise (O) slowly, and stop when noise has disappeared from the lower monitor screen.
- 4) Play back the SP mode alignment tape (WR-5-SCSP) in the forward direction $\times 2$ mode and confirm that no noise appears on the monitor screen lower part.



Fig. 8-6.

8-2-9. Slow Tracking Center Adjustment (SE-7P Board)

Mode	Stop
Signal	Arbitrary
Measurement Point	Player : Pin ② (A SLOW TR) of W002 Recorder : Pin ② (B SLOW TR) of W004
Measuring Instrument	Digital voltmeter
Adjusting Element	Player : RV003 Recorder : RV004
Specified Value	Voltage at Pin ① of W008 2 ± 0.05 Vdc

2-10. STILL Adjustment (SE-7P Board)

Mode	Playback pause (STILL)
Signal	Self-recorded tape in SP mode.
Measurement Point	CH1: TP207 (SV RF : Pin ③ of IC204) CH2: TP228 (ST ID : Pin ③ of IC703)
Measuring Instrument	Oscilloscope
Adjusting Element	RV203 (STILL ADJ 1) RV204 (STILL ADJ 2)
Specified Value	4.8 ± 0.1 (RV203) 13.6 ± 0.1 (RV204)

Adjusting method:

Memorise (A) length. (See Fig. 8-7.)

Make 1 frame FWD playback by using JOG dial, and compare (A) length with it before. When it becomes short, do the adjustment.

When it becomes long, with making 1 frame FWD playback again, confirm it becomes short and adjust. (Adjust when (A) length is short: Short and long (A) repeats mutually whenever making frame by frame playback.)

Adjust to 4.8 ± 0.1 msec with RV203 (See Fig. 8-8.).

Adjust to 13.6 ± 0.1 msec with RV204 (See Fig. 8-8.).

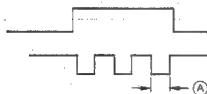


Fig. 8-7.

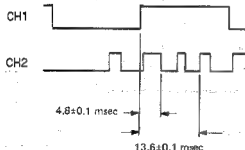


Fig. 8-8.

8-2-11. SP Slow Adjustment (SE-7P Board)

Mode	Forward 1/6 slow playback
Signal	Self-recorded tape in SP mode.
Measurement Point	CH1: TP232 (CAP ON : Pin ③ of CN015) CH2: TP202 (CAP FG : Pin ③ of IC204)
Measuring Instrument	Oscilloscope
Adjusting Element	RV205 (SP SLOW) RV401
Specified Value	RV205: No noise on the monitor screen. RV401: Capstan stops in minimum time.

Connection :

- 1) Connect TP001 (Pin ③ of IC001) to TP002 (GND) with a jumper and set the test mode.

Adjusting method :

- 1) Adjust RV205 center terminal voltage to 1.60 ± 0.05 Vdc.
- 2) Press the SLOW button (S013 on MB-9P board), to set to the forward direction 1/6 slow playback mode.
- 3) Confirm that no noise appears on the monitor screen. (If it does, adjust RV205.)
- 4) Adjust RV401 so as to minimize the time from CAP ON signal (CH1) falling edge to CAP FG signal (CH2) stabilization at level "H" or "L".
- 5) Turn RV205 clockwise (C) so that noise appears on the lower part of the monitor screen.
- 6) Turn RV205 counterclockwise (C) slowly, and stop when noise has disappeared from the lower part of the monitor screen.

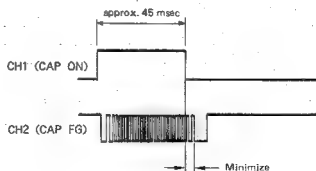


Fig. 8-9. SP slow adjustment

8-2-13. LP Slow Adjustment (SE-7P Board)

Note: Perform SP slow adjustment first.

Mode	Forward 1/5 slow playback
Signal	Self-recorded tape in LP mode.
Measurement Point	Confirm on the monitor TV screen.
Measuring Instrument	RV207 (LP SLOW)
Adjusting Element	RV207 (LP SLOW)
Specified Value	No noise on the monitor screen.

Connection:

- 1) Connect TP001 (Pin ② of IC001) to TP002 (GND) with a jumper.

Adjusting method:

- 1) Press the SLOW button (S013 on MB-9P board), to set to the forward direction 1/5 slow playback mode.
- 2) Turn RV207 clockwise (○) so that noise appears on the lower part of the monitor screen.
- 3) Turn RV207 counterclockwise (○) slowly, and stop when noise has disappeared from the lower part of the monitor screen.

8-2-13. SLOW fh Adjustment (SE-7P Board)

1. fh bias adjustment

LP mode adjusting elements are shown in [].

Mode	Forward frame advance
Signal	Self-recorded tape in SP [LP] mode.
Measurement Point	TP104 on HK-3 board (C.SYNC : Pin ② of IC101)
Measuring Instrument	Oscilloscope
Adjusting Element	RV216 [RV215]
Specified Value	Minimum fh pulse fluctuation

Adjusting method:

- 1) Turn the editing controller JOG dial to perform frame advance in the forward direction.
- 2) Adjust fluctuation of the frame advance fh pulse to minimum with RV216 [RV215].

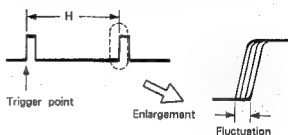


Fig. 8-10.

2. SLOW fh adjustment

Mode	Forward 1/5 slow playback
Signal	Self-recorded tape in SP mode.
Measurement Point	TP104 on HK-3 board (C.SYNC : Pin ② of IC101)
Measuring Instrument	Oscilloscope
Adjusting Element	RV212
Specified Value	Minimum fh pulse fluctuation

Adjusting method:

- 1) Press the SLOW button (S013 on MB-9P board), to set to the forward direction 1/5 slow playback mode.
- 2) Adjust RV212 so as to minimize fh pulse fluctuation.

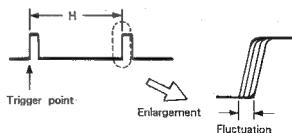


Fig. 8-11.

8-3. VIDEO ADJUSTMENT

Adjustment of the video system should in principle be performed in the sequence below.

The color video signal supplied by the pattern generator is used as video input signal for adjustment of the video system for recording mode. Confirm that the SYNC and color burst signals match the specifications for adjustment setup in Fig. 8-2.

[Adjustment sequence]

- 1) Playback frequency characteristics adjustment
- 2) Flying erase check
- 3) Crystal Oscillator fo adjustment
- 4) REC Y level adjustment
- 5) Y/C separation adjustment
- 6) Y comb-type filter adjustment
- 7) SYNC AGC adjustment
- 8) VIDEO OUT level adjustment
- 9) PB Y level adjustment
- 0) Y FM carrier frequency adjustment
- 1) Y FM deviation adjustment
- 2) Emphasis adjustment
- 3) 378fo VCO adjustment
- 4) Chroma emphasis fo adjustment
- 5) Carrier balance adjustment
- 6) GCA adjustment
- 7) H VCO adjustment
- 8) REC Y RF level adjustment
- 9) RECC RF level adjustment
- 0) REC AFM RF level check
- 1) REC ATF RF level check
- 2) REC Y recording current adjustment
- 3) REC PCM recording current adjustment
- 4) Chroma signal output level adjustment

3-1. Playback Frequency Characteristics Adjustment (RP-52P/FR-30P Board)

12 adjusting elements are shown in [].

LP CH1 and LP CH2 adjustment

Mode	Playback
Signal	Alignment tape : For frequency characteristics adjustment (WR5-6C)
Measurement Point	Pin ③ [Pin ④] of CN104 on FR-30P board External trigger : Pin ② of CN104 Trigger slope : +, [-]
Measuring Instrument	Oscilloscope
Adjusting Element	LP side : RV103 [RV104] on RP-52P board
Specified Value	3.5 MHz level : 5.5 MHz level = 4 : 3

Adjusting method :

- 1) Adjust the LP side RV103 on RP-52P board [RV104] so that the ratio of the 3.58 MHz level and the 5.5 MHz level is 4 : 3.

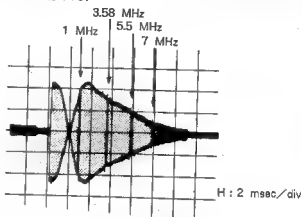


Fig. 8-12. Playback frequency characteristics adjustment

2. SP CH1 and SP CH2 adjustment

Mode	Playback
Signal	Alignment tape : For frequency characteristics adjustment (WR5-6C)
Measurement Point	Pin ⑤ [Pin ⑥] of CN104 on FR-30P board External trigger : Pin ② of CN104 on RP-52P board Trigger slope : -, [+]
Measuring Instrument	Oscilloscope
Adjusting Element	SP side : RV103 [RV104] on RP-52P board
Specified Value	3.5 MHz level : 5.5 MHz level = 4 : 3

Connection :

- 1) Connect TP206 on the SE-7P board (F TAPE: Pin ② of IC205) to GND with a jumper.

Adjusting method :

- 1) Adjust the SP side RV103 on RP-52P board [RV104] so that the ratio of the 3.58 MHz level and the 5.5 MHz level is 4 : 3.

8-3-2. Flying Erase Check (FR-30P Board)

Note: This adjustment is unnecessary for the player side.

Mode	Recording
Signal	Arbitrary
Measurement Point	TP401 (FE CHECK : Pin ⑤ of CN101)
Measuring Instrument	Oscilloscope and frequency counter
Specified Value	Frequency : 7.9 ± 0.5 MHz and over Voltage : 8.0 ± 1.6 Vp-p and over

Note: Use an MP-type tape. (Pin ⑤ of CN102 on the FR-30P board should be at "L".)

Checking method:

- 1) Confirm that oscillation frequency is 7.9 ± 0.5 MHz and oscillation voltage is 8.0 ± 1.6 Vp-p.

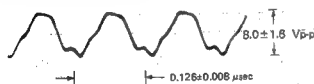


Fig. 8-13.

8-3-3. Crystal Oscillator fo Adjustment (HK-3 Board)

Mode	Playback
Signal	Alignment tape : For operation confirmation (WR5-5CSP)
Measurement Point	TP301 (3.58 : Pin ③ of IC301)
Measuring Instrument	Frequency counter
Adjusting Element	CV301
Specified Value	443619 ± 30 Hz

Note: Connect the frequency counter through a high-impedance (about $10^4 \text{ M}\Omega$) and low-capacity (10 pF or less) buffer.

Adjusting method:

- 1) Adjust to 443619 ± 30 Hz with CV301.

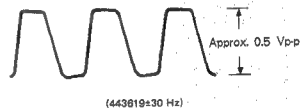


Fig. 8-14. Crystal oscillator fo adjustment

8-4. REC Y Level Adjustment (HK-3 Board)

Note: This adjustment is unnecessary for the player side.

Mode	E-E
Signal	Color bar
Measurement Point	TP101 (REC Y)
Measuring Instrument	Oscilloscope
Adjusting Element	RV701 (REC Y)
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method:

Remove CN002 from the DM-24 board.

Connect J037 on the JB-1P board (recorder video input terminal) to Pin ② (EXT Y IN) of CN103 on the HK-3 board with a jumper.
Connect Pin ③ (EXT/INT) of CN103 on the HK-3 board to GND with a jumper.

Justifying method:

Confirm that the video signal level at Pin ② of CN103 is 1.00 Vp-p.
Adjust the video signal level at TP101 to 0.50 ± 0.02 Vp-p with RV701.

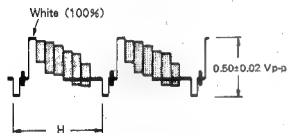


Fig. 8-15. REC Y level adjustment

8-3-5. Y/C Separation Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ② of IC201
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 and LV201 (COMB FILTER)
Specified Value	Minimum residual chroma component

Adjusting method:

- 1) Connect to ground. Base of Q212 on HK-3 board.
- 2) Adjust RV202 and LV201 alternately so as to minimize the residual chroma component.

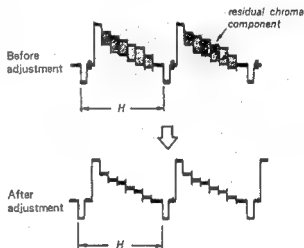


Fig. 8-16. Y/C separation adjustment

8-3-6. Y Comb-type Filter Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ② of IC201
Measuring Instrument	Oscilloscope
Adjusting Element	RV201 (COMB AGC)
Specified Value	The amplitude between white (100%) and II SYNC sections is 0 ± 15 mVp-p

Adjusting method:

- 1) Adjust RV201 so that no difference between H SYNC and white 100% in level occurs each 1H.

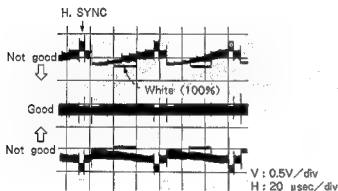


Fig. 8-17.

8-3-7. SYNC AGC Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	TP101 (REC Y: Pin ② of IC101)
Measuring Instrument	Oscilloscope
Adjusting Element	RV106 (SYNC AGC)
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method:

- 1) Adjust to 0.50 ± 0.02 Vp-p with RV106.

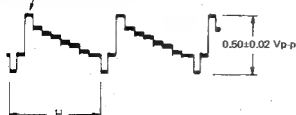


Fig. 8-18. SYNC AGC adjustment

8-3-8. VIDEO OUT Level Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	TP103 (V OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV107 (V OUT)
Specified Value	2.00 ± 0.05 Vp-p

Adjusting method:

- 1) Adjust to 2.00 ± 0.05 Vp-p with RV107.

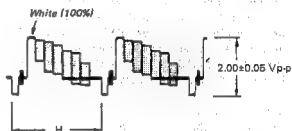


Fig. 8-19. VIDEO OUT level adjustment

8-3-9. PB Y Level Adjustment (HK-3 Board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-SCSP) Color bar section
Measurement Point	TP101
Measuring Instrument	Oscilloscope
Adjusting Element	RV101 (PB Y)
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method:

- 1) Adjust to 0.50 ± 0.02 Vp-p with RV101.

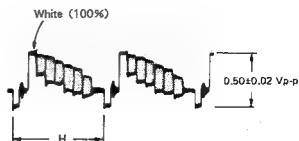


Fig. 8-20. PB Y level adjustment

8-3-10. Y FM Carrier Frequency Adjustment (HK-3 Board)

Note: This adjustment is unnecessary for the player side.

Mode	E-E
Signal	Non-signal
Measurement Point	TP501
Measuring Instrument	Frequency counter
Adjusting Element	RV103
Specified Value	4.20 ± 0.04 MHz

Adjusting method:

- 1) Set RV104 (EMPHASIS) to the mechanical center.
- 2) Adjust to 4.20 ± 0.04 MHz with RV103.
- 3) Perform "Deviation adjustment" and "Emphasis adjustment".

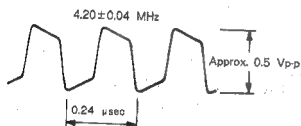


Fig. 8-21. Y FM Carrier frequency adjustment

8-3-11. Y FM Deviation Adjustment (HK-3 Board)

Note: This adjustment is unnecessary for the player side.

Mode	Recording and playback
Signal	Color bar
Measurement Point	TP102
Measuring Instrument	Oscilloscope
Adjusting Element	RV102
Specified Value	Playback level is 0.50 ± 0.02 Vp-p

Note: Perform "PB Y level adjustment" and "Y FM carrier frequency adjustments" first.

Adjusting method:

- 1) Record the color bar signal.
- 2) Play back the recorded level.
- 3) Confirm the playback output level.
Specification: 0.50 ± 0.02 Vp-p
- 4) If level does not meet the specification, turn RV102 as shown below and repeat steps 1) to 3).

	RV102 adjustment direction
Value smaller than specified	clockwise (C)
Value larger than specified	counterclockwise (C)

Table 8-2.

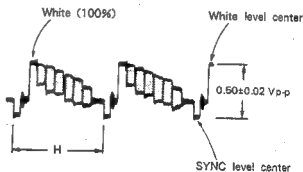


Fig. 8-22. Y FM deviation adjustment

8-3-12. Emphasis Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	TF102 (EMPH: Pin ② of IC101)
Measuring Instrument	Oscilloscope
Adjusting Element	RV104 (EMPH)
Specified Value	235±5%

Adjusting method:

- 1) Adjust the white 100% peak to 235 ±5% with RV104.

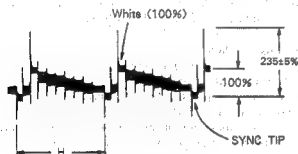


Fig. 8-23. Emphasis adjustment

8-3-13. 375fH VCO Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ④ of IC301
Measuring Instrument	Digital voltmeter
Adjusting Element	RV301
Specified Value	3.0±0.1 Vdc

Adjusting method:

- 1) Adjust to 3.0±0.1 Vdc with RV301.

8-3-14. Chroma Emphasis Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ③ of IC302
Measuring Instrument	Oscilloscope
Adjusting Element	T303 (C. EMPH)
Specified Value	Minimum 10 component

Connection:

- 1) Perform the following two connections with 15 kΩ resistor.

- Pin ② of IC301 (ACC) — Pin ④ of CN102 (REG 5V)
- Pin ② of IC301 (ACC) — GND

Adjusting method:

- 1) Minimize amplitude of the chroma signal flat section with T303.



Fig. 8-24. Chroma emphasis adjustment

8-3-15. Carrier Balance Adjustment (HK-3 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ④ of IC301
Measuring Instrument	Oscilloscope
Adjusting Element	RV302 (CAR BAL)
Specified Value	Minimum 3.7 – 5.17 MHz component

Adjusting method:

- 1) Adjust RV302 so that the 3.7 – 5.17 MHz component is minimum.

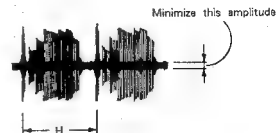


Fig. 8-25. Carrier balance adjustment

8-3-16. GCA Adjustment (HK-3 Board)

Mode	Playback Pause
Signal	Arbitrary tape
Measurement Point	Pin ② of IC304
Measuring Instrument	Oscilloscope
Adjusting Element	RV303
Specified Value	500 ± 25 mVp-p

Adjusting method:

- 1) Adjust with RV303 so that it becomes 500 ± 25 mVp-p.
- 2) Set to either the STILL, CUE and Review mode, and be sure to confirm that the thickness of the colour does not differ from that of the playback mode. If necessary, adjust with RV303. (Be sure to play back a tape of LP mode.)

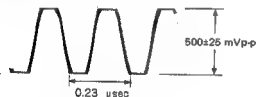


Fig. 8-26.

8-3-17. fH VCO Adjustment (HK-3 Board)

Mode	E-E
Signal	Colour bar
Measurement Point	CH1: Pin ③ of IC304 CH2: TP103
Measuring Instrument	Oscilloscope
Adjusting Element	RV304
Specified Value	$14.5 \pm 0.2 \mu\text{sec}$

Adjustment method:

- 1) Adjust RV304 so that the TR of CH1 is $14.5 \pm 0.2 \mu\text{sec}$.
- 2) Confirm that the H (time) of CH1 and CH2 is stable.

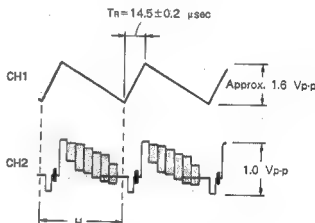


Fig. 8-27. fH VCO adjustment

8-3-18. REC Y RF Level Adjustment (HK-3 Board)

Note: This adjustment is unnecessary for the player side.

Mode	E-E
Signal	Non-signal
Measurement Point	TP501 (REC RF: Pin ⑤ of CN102)
Measuring Instrument	Oscilloscope
Adjusting Element	RV501
Specified Value	0.50 ± 0.02 Vp-p

Adjusting method:

- 1) Adjust to 0.50 ± 0.02 Vp-p with RV501.

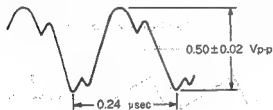


Fig. 8-28.

8-3-19. REC C RF Level (HK-3 Board)

Note: This adjustment is unnecessary for the player side.

Mode	E-E
Signal	Color bar
Measurement Point	TP501 (REC RF: Pin ⑤ of CN102)
Measuring Instrument	Oscilloscope
Adjusting Element	RV501 (C, RF)
Specified Value	100 ± 15 mVp-p

Note: An MP-type tape should be inserted. (Pin ⑥ of CN101 should be at "L").

Connection:

- 1) Perform the three connections below with a jumper in order to prevent other recording signals from interfering.
 - Emitter of Q502 (REC Y) — GND
 - Collector of Q802 (Pin ① of IC801) — Emitter of Q804 (REG 5V)
 - Pin ① of CN101 (REC ATF) — GND

Adjusting method:

- 1) Adjust to 100 ± 15 mVp-p with RV501.

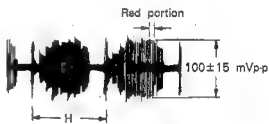


Fig. 8-29. REC C RF level

8-3-20. REC AFM RF Level Check (HK-3 Board)

Note: This check is unnecessary for the player side.

Mode	E-E
Signal	Non-signal
Measurement Point	TP501 (REC RF: Pin ⑤ of CN102)
Measuring Instrument	Oscilloscope
Specified Value	21 ± 7 mVp-p

Note: An MP-type tape should be inserted. (Pin ⑤ of CN101 should be at "L").

Connection:

Perform the two connections below with a jumper in order to prevent other recording signals from interfering.

- Emitter of Q502 (REC Y) — GND
- Pin ④ of CN101 (REC ATF) — GND

Checking method:

Confirm that level of the REC AFM RF signal is 21 ± 7 mVp-p.

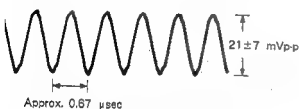


Fig. 8-30. REC AFM RF level check

8-3-21. REC ATF RF Level Check (HK-3 Board)

Note: This check is unnecessary for the player side.

Mode	E-E
Signal	Non-signal
Measurement Point	TP501 (REC RF: Pin ⑤ of CN102)
Measuring Instrument	Oscilloscope
Specified Value	11 ± 5 mVp-p

Connection:

1) Perform the two connections below with a jumper in order to prevent other recording signals from interfering.

- Emitter of Q502 (REC Y) — GND
- Collector of Q802 (Pin ④ of IC801) — Emitter of Q802 (REC 5V)

Checking method:

1) Confirm that level of the REC ATF RF level is 11 ± 5 mVp-p.

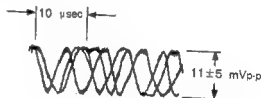


Fig. 8-31. REC ATF RF level check

8-3-22. REC Y Recording Current Adjustment (RP-52P/FR-30P Boards)

- Note:** 1) This adjustment is unnecessary for the player side.
2) Adjusting elements for the LP side are shown in [].

Mode	Recording
Signal	Non-signal
Measurement Point	TP101 (SP 1CH CUR) on FR-30P board [TP102 (LP 2CH CUR)]
Measuring Instrument	Oscilloscope
Adjusting Element	SP side: RV101 on RP-52P board [LP side: RV101 on RP-52P board]
Specified Value	195 mVp-p [170 mVp-p]

Adjusting method:

- 1) Adjust to 195 mVp-p [170 mVp-p] with RV101 on the RP-52P board.

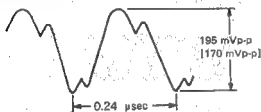


Fig. 8-32.

8-3-23. REC PCM Recording Current Adjustment (RP-52P/FR-30P Boards)

- Note:** 1) This adjustment is unnecessary for the player side.
2) Adjusting elements for the LP side are shown in [].

Mode	Recording
Signal	Non-signal
Measurement Point	TP101 (SP 1CH CUR) on FR-30P board [TP102 (LP 2CH CUR)]
Measuring Instrument	Oscilloscope
Adjusting Element	SP side: RV102 on RP-52P board [LP side: RV102 on RP-52P board]
Specified Value	175 mVp-p [160 mVp-p]

Adjusting method:

- 1) Adjust to 175 mVp-p [160 mVp-p] with RV102 on the RP-52P board.

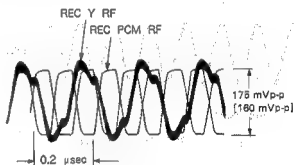


Fig. 8-33. REC PCM recording current adjustment

8-3-24. Chroma Signal Output Level Adjustment (HK-3 Board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WK5-5CSP) Color bar section
Measurement Point	Pin ⑨ of CN103 (EXT C OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV305
Specified Value	300 ± 10 mVp-p

Adjusting method :

- 1) Adjust burst level to 300 ± 10 mVp-p with RV305.



Fig. 8-34. Chroma signal output level adjustment.

8-4. DIGITAL PICTURE SYSTEM ADJUSTMENT

For this adjustment, the video signal coming through the "Recorder video input terminal" and the player playback signal are used as adjustment signals. Confirm the following two points before performing the adjustment.

1. The Y signal input via the recorder (Pin ③ of CN002 on the DM-24 board) must be 1 Vp-p. Also, burst of the chroma signal (Pin ⑦ of CN002 on the DM-24 board) must be 285 mVp-p, and the video signal (Pin ② of CN002 on the DM-24 board) must be 2 Vp-p.
(Confirm this with the recorder input select switch in the "EXT" position and the recorder in the stop mode).
2. The Y playback signal from the player (Pin ③ of CN001 on the DM-24 board) must be 1 Vp-p. Burst of the chroma signal (Pin ⑦ of CN001 on the DM-24 board) must be 300 mVp-p, and the video signal (Pin ② of CN001 on the DM-24 board) must be 2 Vp-p.
(Confirm this by playing back the color bar section of the alignment tape (WR5-SCSP) on the player for operation check).

8-4-1. Main Clock Adjustment (DM-24 Board)

Mode	Stop (Player side and recorder side)
Signal	Arbitrary
Measurement Point	TP504 (Pin ③ of IC521)
Measuring Instrument	Frequency counter
Adjusting Element	CV501
Specified Value	4433618±20 Hz

Adjusting method :

- 1) Adjust to 4433618 ±20 Hz with CV501.

8-4-2. Y Input Level Adjustment (DM-24 Board)

Mode	Playback (Player side)
Signal	Alignment tape : For operation, confirmation (WR5-SCSP) Color bar section
Measurement Point	TP001 (Pin ③ of CN009)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001
Specified Value	1.0±0.05 Vp-p

Connection :

- 1) Connect the editing controller.

Switch setting :

- Recorder input select switchPLAYER

Adjusting method :

- 1) Press the editing controller "RECORDER" button.
- 2) Adjust to 1.0 ±0.05 Vp-p with RV001.



Fig. 8-35. Y input level adjustment

8-4-3. Decoder Oscillation Free-run Frequency Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Non-signal
Measurement Point	TP005 (Pin ⑩ of IC001)
Measuring Instrument	Frequency counter *Note
Adjusting Element	CV001
Specified Value	4433618±20 Hz

Note: Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) with a high input resistor (1 MΩ or more) and low capacity (10 pF or less).

Connection:

- 1) Remove the pattern generator from the recorder video input terminal, and input no signals.

Switch setting:

- Recorder input select switchLINE

Adjusting method:

- 1) Adjust to 4433618 ±20 Hz with CV001.



(4433618±20 Hz)

Fig. 8-36. Decoder oscillation free-run frequency adjustment

8-4-4. Clamp Pulse Amplitude Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	TP015
Measuring Instrument	Oscilloscope
Adjusting Element	RV007
Specified Value	3.0±0.2 μsec

Switch setting:

- Recorder input select switchEXT

Adjusting method:

- 1) Adjust pulse amplitude to 3.0±0.2 μsec with RV007.

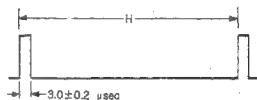


Fig. 8-37. Clamp pulse amplitude adjustment

8-4-5. Decoder Color Phase Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	TP002 (B-Y) Pin ⑩ of IC013
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV004 (TINT)
Specified Value	2.3±0.05 Vdc

Switch setting:

- Recorder input select switchEXT

Adjusting method:

- 1) Adjust to 2.3 ± 0.05 Vdc with RV004.



Fig. 8-38. Decoder color phase adjustment

8-4-6. Colour Difference Signal Level Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	TP007 (R-Y)
Measuring Instrument	Oscilloscope
Adjusting Element	RV003
Specified Value	0.90 ± 0.05 Vp-p

Switch setting :

- Recorder input select switchEXT

Adjusting method :

- 1) Adjust the R-Y signal level to 0.90 ± 0.05 Vp-p with RV003.

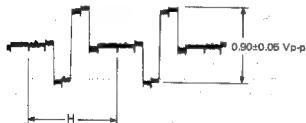


Fig. 8-39. Color difference signal DC level adjustment

8-4-7. Y A-D Input DC Level Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	TP008 (Y)
Measuring Instrument	Oscilloscope (DC range)
Adjusting Element	RV005
Specified Value	3.15 ± 0.05 Vdc

Switch setting :

- Recorder input select switchEXT

Adjusting method :

- 1) Adjust the Y signal pedestal level to 3.15 ± 0.05 Vdc with RV005.

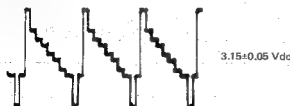


Fig. 8-40. Y A-D input DC level adjustment

8-4-8. APC Oscillation Free-run Frequency Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Non-signal
Measurement Point	TP012
Measuring Instrument	Frequency counter
Adjusting Element	CV002
Specified Value	4433618 ± 20 Hz

Note : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) with a high input resistor (1 MΩ or more) and low capacity (10 pF or less).

Connection :

- 1) Remove the pattern generator from the recorder video input terminal, and input no signals.

Switch setting :

- Recorder input select switchEXT

Adjusting method :

- 1) Adjust to 4433618 ± 20 Hz with CV002.

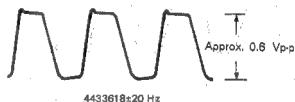


Fig. 8-41. APC oscillation free-run frequency adjustment

4-9. Readout HD Signal AFC Adjustment (DM-24 Board)

Mode	Playback (Player side and recorder side)
Signal	Arbitrary tape recorded in SP mode
Measurement Point	CH1: TP010 CH2: TP011
Measuring Instrument	Oscilloscope
Adjusting Element	RV011
Specified Value	$0.00 \pm 0.05 \mu\text{sec}$

Adjusting method:

Adjust phase difference between CH1 and CH2 to $0.00 \pm 0.05 \mu\text{sec}$ with RV011.

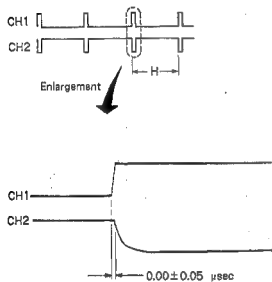


Fig. 8-42. Readout HD signal AFC adjustment

8-4-10. Write-in Clock Adjustment (DM-15P Board)

Mode	Stop (Recorder side)
Signal	Colour bar
Measurement Point	TP401 (Pin 5 of IC415)
Measuring Instrument	Frequency counter
Adjusting Element	Trimmer capacitor on IC415 (HIC)
Specified Value	$10.00 \pm 0.01 \text{ MHz}$

Switch setting:

- Recorder input select switch PLAYER
- Controller PLAYER

Connection:

- 1) Connect TP502 on DM-24 board (Pin 5 of IC501) to TP503 (GND) with a jumper to set the test mode.

Adjusting method:

- 1) Adjust to $10.00 \pm 0.01 \text{ MHz}$ with trimmer capacitor on IC415 (HIC).



Fig. 8-43. Write-in clock adjustment

8-4-11. SYNC Level Adjustment (DM-24 Board)

Mode	Stop
Signal	Colour bar
Measurement Point	TP009
Measuring Instrument	Oscilloscope
Adjusting Element	RV012
Specified Value	0.60 ± 0.02 V

Switch setting:

- Recorder input select switch **PLAYER**
- Controller **PLAYER**

Connection:

- 1) Connect TP502 on DM-24 board (Pin 5 of IC501) to TP503 (GND) with a jumper to set the test mode.

Adjusting method:

- 1) Adjust to 0.60 ± 0.02 V with RV012.

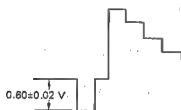


Fig. 8-44.

8-4-12. Encoder Carrier Balance Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	TP009
Measuring Instrument	Oscilloscope
Adjusting Element	RV008, RV010
Specified Value	Minimum chroma component of the white portion

Switch setting:

- Recorder input select switch **PLAYER**
- Controller **PLAYER**

Connection:

- 1) Connect TP502 (Pin 5 of IC501) to TP503 (GND) with a jumper to set the test mode.

Adjusting method:

- 1) Turn RV008 and RV010 alternately so as to minimize the chroma component (4.43 MHz) of the white portion.

Minimize amplitude of this portion.



Fig. 8-45. Encoder carrier balance adjustment

4-13. Burst Level Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	TP009
Measuring Instrument	Oscilloscope
Adjusting Element	RV009
Specified Value	600 ± 30 mVp-p

Switch setting:

Recorder input select switchEXT

Connection:

1) Connect TP502 (Pin ⑤ of IC501) to TP503 (GND) with a jumper to set the test mode.

Adjusting method:

1) Adjust the burst level to 600 ± 30 mVp-p with RV009.

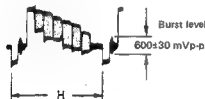


Fig. 8-46. Burst level adjustment

4-14. Player Character Position Adjustment (DM-24 Board)

Mode	Playback (Player side)
Signal	Arbitrary tape recorded in SP mode
Measurement Point	TP002
Measuring Instrument	Oscilloscope
Adjusting Element	RV015
Specified Value	2.90 ± 0.05 msec

Switch setting:

Recorder input select switchPLAYER

Adjusting method:

1) Adjust to 2.90 ± 0.05 msec with RV015.

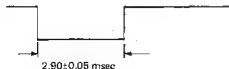


Fig. 8-47. Player character position adjustment

8-15. Recorder Character Position Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	TP003
Measuring Instrument	Oscilloscope
Adjusting Element	RV014
Specified Value	2.90 ± 0.05 msec

Switch setting:

• Recorder input select switchEXT

Adjusting method:

1) Adjust to 2.90 ± 0.05 msec with RV014.

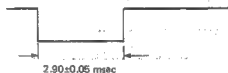


Fig. 8-48. Recorder character position adjustment

8-18. Encoder Hue Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	Monitor video output terminal
Measuring Instrument	TV monitor
Adjusting Element	RV013
Specified Value	Hue of child screen and parent screen is equivalent

Switch setting:

• Recorder input select switchEXT

Adjusting method:

1) Match hue of the child picture to that of the parent picture with RV013.

8-4-17. External Sync VD Adjustment (DM-24 Board)

Mode	Stop (Recorder side)
Signal	Color bar
Measurement Point	CH1 : Pin ⑦ of CN004 CH2 : TP018
Measuring Instrument	Oscilloscope
Adjusting Element	RV016
Specified Value	136.7±5 μsec

Switch setting:

- Recorder input select switch LINE

Adjusting method:

- 1) Adjust delay to 136.7 ± 5 μsec with RV016.

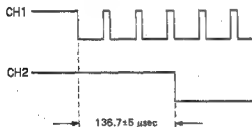


Fig. 8-49. External sync VD adjustment

8-5. AUDIO SYSTEM ADJUSTMENT

- Use a color bar signal as video input signal for adjustment.

[Connection of measuring instruments for audio]
In addition to video system measuring instruments, connect the audio system ones as shown in the figure below and perform adjustment in the VTR mode.

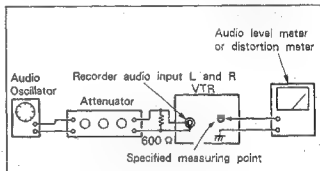


Fig. 8-50.

8-5-1. PCM Audio System Adjustment

Unless otherwise indicated, set switches to the following positions for adjustment.

- Monitor audio output select switch PCM
- Player audio output select switch PCM
- Recorder input select switch EXT

Input the audio signal to both L and R input terminals of the recorder simultaneously.

Note: Adjusting elements for the R channel are shown in [].

[Adjustment procedure]

- 1) PCM master clock adjustment
- 2) PCM playback VCO free oscillation frequency adjustment
- 3) D-A converter level adjustment
- 4) NR decode level adjustment
- 5) A-D converter offset adjustment
- 6) E-E output level check
- 7) PCM recording level adjustment
- 8) Overall frequency characteristics check
- 9) Overall distortion check
- 10) Overall noise level check

PCM master clock adjustment
(PD-16P/MB-9P boards)

Mode	E-E
Signal	Non-signal
Measurement Point	Pin ② of CN001 on PA-11P board (MGK)
Measuring Instrument	Frequency counter
Adjusting Element	RV851 on PD-6P board
Specified Value	11.45 ± 0.01 MHz

Adjusting method:

Connect Pin ③ (PCO IN) to Pin ④ (VCC 5V) on the PD-16P board with a jumper.
Adjust to 11.45 ± 0.01 MHz with RV851.
Remove the jumper.
Connect Pin ④ on the PD-16P board to GND with a jumper.
Confirm that frequency is 11.63 MHz or higher.



Fig. 8-51.

2. PCM playback VCO free oscillation frequency adjustment (PD-16P/MB-9P boards)

Mode	Playback
Signal	Arbitrary tape
Measurement Point	Pin ④ of IC854 on PD-16P board
Measuring Instrument	Frequency counter
Adjusting Element	RV854 on PD-6P board
Specified Value	11.58 ± 0.05 MHz

Note: Remove the PA-11P board before adjusting.

Connection:

- 1) Connect Pin ③ (DUTY) of CN851 to Pin ① (VCC 5V) of CN852 on the PD-16P board with a jumper.
- 2) Connect Pin ⑦ (PR PCM CARRIER) of CN852 to Pin ② (GND) of CN852 on the PD-16P board with a jumper.

Adjusting method:

- 1) Adjust to 11.58 ± 0.05 MHz with RV854 on the PD-16P board.



Fig. 8-52.

3. D-A converter level adjustment (PA-11P/MB-9P boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-SCSP) 1kHz (Color bar) section
Measurement Point	Pin ⑤ of CN001 on PA-11P board (L DA OUT) [Pin ④ (R DA OUT)]
Measuring Instrument	Audio level meter
Adjusting Element	RV032 on PA-11P board
Specified Value	-4.0 ± 0.2 dBs

Adjusting method:

- 1) Adjust to -4.0 ± 0.2 dBs with RV032.

Note: If there is a level difference between L and R channels, adjust to the center value.

4. NR decode level adjustment (PA-11P/MB-9P boards)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WR5-SCSP) 400Hz (Monoscope section)
Measurement Point	Pin ⑤ of CN001 on PA-11 board (L PB OUT) [Pin ④ (R PB OUT)]
Measuring Instrument	Audio level meter
Adjusting Element	RV031 on PA-11P board
Specified Value	-14.0 ± 0.2 dBs

Adjusting method:

- 1) Adjust to -14.0 ± 0.2 dBs with RV031.

Note: If there is a level difference between L and R channels, adjust to the center value.

5. A-D converter offset adjustment (PA-11P/MB-9P boards)

Note: This adjustment is unnecessary for the player side.

Mode	REC
Signal	Non-signal
Measurement Point	CH1: Pin ① of CN001 on PA-11P board (AD/DA DATA) CH2: Pin ② of CN001 on PA-11P board (WCK)
Measuring Instrument	Oscilloscope
Adjusting Element	RV001 on PA-11P board [RV051]
Specified Value	Brightness of upper luminance line and lower luminance line is equivalent.

Note: Since L and R channels interfere with each other, perform adjustment alternately.

Connection:

- 1) Connect with jumper the following pins of CN003 on the MB-9P board.
 - Pin ③ (L IN) — Pin ② (GND)
 - Pin ④ (R IN) — Pin ⑤ (GND)

Adjusting method:

- 1) Adjust RV001 [RV051] so as to make brightness of the upper and lower luminance lines equal.

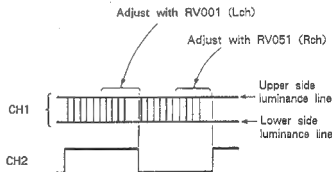


Fig. 8-53.

E-E output level check

Note: This check is unnecessary for the player side.

Mode	E-E
Signal	400 Hz, -10 dBs: Recorder audio input terminal L [R]
Measurement Point	Pin ② of CN001 on PA-11P board (L PB OUT) [Pin ⑤ (R PB OUT)]
Measuring Instrument	Audio level meter
Specified Value	-16.0±0.5 dBs

Checking method:

- 1) Confirm that signal level is -16.0 ± 0.5 dBs.

PCM recording level adjustment

(PA-11P/MB-8P boards)

Note: This adjustment is unnecessary for the player side.

Mode	Self-recording and playback
Signal	400 Hz, -10 dBs: Recorder audio input terminal L [R]
Measurement Point	Pin ② of CN001 on PA-11P board (L PB OUT) [Pin ⑤ (R PB OUT)]
Measuring Instrument	Audio level meter
Adjusting Element	RV002 on PA-11P board [RV052]
Specified Value	-14.0±0.5 dBs

Note: Perform "NR decode level adjustment" first.

Adjusting method:

Record the signal.

Playback the recorded section.

Confirm that the playback signal level is -14.0 ± 0.5 dBs.

If the reading does not meet the specification, adjust RV002 [RV052] and repeat steps 1) to 3).

8. Overall frequency characteristics check

Mode	Self-recording and playback
Signal	① 400 Hz, -20 dBs ② 20 Hz, -20 dBs ③ 14 kHz, -20 dBs Recorder audio input terminal L [R]
Measurement Point	Pin ① of CN003 on MB-9P board [Pin ③]
Measuring Instrument	Audio level meter
Specified Value	When the 400 Hz playback output level is specified as 0 dB, the playback output levels of 20 Hz becomes $0 \pm \frac{1}{2}$ dB, the playback output levels of 14 kHz becomes $0 \pm \frac{1}{2}$ dB.

Note: When checking the player side, use a tape recorded on the recorder side.

Checking method:

- 1) Record signals ① to ③, in this order.
- 2) Playback the recorded section.
- 3) Confirm that the 20 Hz playback output level is $0 \pm \frac{1}{2}$ dB and the 14 kHz playback output level is $0 \pm \frac{1}{2}$ dB when the 400 Hz playback output level is set to 0 dB.

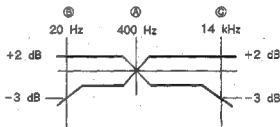


Fig. 8-54.

9. Overall distortion check

Mode	Self-recording and playback
Signal	1 kHz, -0 dBs; Recorder audio input terminal L [R]
Measurement Point	Pin ① of CN003 on MB-9P board [Pin ⑥]
Measuring Instrument	Distortion meter
Specified Value	Less than 0.35% *1

Note: When checking the player side, use a tape recorded on the recorder side.

Checking method:

- 1) Record the signal.
- 2) Playback the recorded section.
- 3) Confirm that the distortion rate is less than 0.35% *1.

*1 Value during using a 30 kHz LPF.

10. Overall noise level check

Mode	Self-recording and playback
Signal	Non-signal (Insert shorting plugs into the recorder audio input terminals L and R.)
Measurement Point	Pin ① of CN003 on MB-9P board [Pin ⑥]
Measuring Instrument	Audio level meter
Specified Value	Less than -85 dBs *2

Note: When checking the player side, use a tape recorded on the recorder side.

Checking method:

- 1) Record the signal.
 - 2) Playback the recorded section.
 - 3) Confirm that noise level is less than -85 dBs *2
- *2 Value during using an IHF-A listening sensitivity correction filter.

8-5-2. AFM Audio System Adjustment

Notes: 1) Input the audio signal to both L and R audio input terminals of the recorder simultaneously.

- 2) Set switches to the following positions for adjustment.

- Monitor audio output select switch Standard
- Player audio output select switch Standard
- Recorder input select switch EXT

1. AFM carrier frequency check (HK-3 board)

Mode	Playback
Signal	Non-signal
Measurement Point	Pin ② of IC801
Measuring Instrument	Frequency counter
Specified Value	1.500 ± 0.002 MHz

Checking method:

- 1) Turn the audio oscillator output OFF.
- 2) Confirm the reading on frequency counter becomes 1.500 ± 0.002 MHz.

2. AFM deviation check (HK-3 board)

Mode	Playback
Signal	Alignment tape: For operation confirmation (WRS-5CSP)
Measurement Point	Pin ③ of CN103
Measuring Instrument	Audio level meter
Specified Value	-10 ± 1.0 dBs

Checking method:

- 1) Confirm the reading on audio level meter becomes -10 ± 1.0 dBs.

E-E output level check

Note: This check is unnecessary for the player side.

Mode	E-E
Signal	400 Hz, -10 dBs
Measurement Point	Pin ③ of CN003 on MA-22 board
Measuring Instrument	Audio level meter
Specified Value	-7±2 dBs

Checking method:

1) Confirm that the audio output level is -7±2 dBs.

Overall level characteristics check

Mode	Self-recording and playback
Signal	400 Hz, -10 dBs
Measurement Point	Checking recorder side: Pin ③ of CN003 on MA-22 board Checking player side: Pin ③ of CN010 on MA-22 board
Measuring Instrument	Audio level meter
Specified Value	-10±1.5 dBs

Note: When checking the player side, use a tape recorded on the recorder side.

Checking method:

Record the signal.

Playback the recorded section.

Confirm that the audio output level is -10±1.5 dBs.

5. Overall frequency characteristics check

Mode	Self-recording and playback
Signal	① 400 Hz, -20 dBs ② 30 Hz, -20 dBs ③ 14 kHz, -20 dBs
Measurement Point	Checking recorder side: Pin ③ of CN003 on MA-22 board Checking player side: Pin ③ of CN010 on MA-22 board
Measuring Instrument	Audio level meter
Specified Value	When the 400 Hz playback output level is specified as 0dB, the playback output levels of 30 Hz and 14 kHz become both 0±3 dB.

Note: When checking the player side, use a tape recorded on the recorder side.

Checking method:

- 1) Record signals ① to ③, in this order.
- 2) Playback the recorded section.
- 3) Confirm that 30 Hz and 14 kHz playback output levels are both 0±3 dB when the 400 Hz playback output level is set to 0 dB.

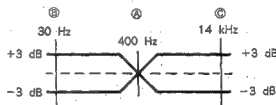


Fig. 8-55. Overall frequency characteristics check

6. Overall distortion check

Mode	Self-recording and playback
Signal	400 Hz, -10 dBs
Measurement Point	Checking recorder side : Pin ③ of CN003 on MA-22 board Checking player side : Pin ③ of CN010 on MA-22 board
Measuring Instrument	Distortion meter
Specified Value	Less than 0.8% *1

Note : When checking the player side, use a tape recorded on the recorder side.

Checking method :

- 1) Record the signal.
- 2) Playback the recorded section.
- 3) Confirm that the distortion rate is less than 0.8% *1.
*1 Value during using a 30 kHz LPF.

7. Overall noise level check

Mode	Self-recording and playback
Signal	Non-signal (Insert shorting plugs into the AUDIO IN terminals L and R.)
Measurement Point	Checking recorder side : Pin ③ of CN003 on MA-22 board Checking player side : Pin ③ of CN010 on MA-22 board
Measuring Instrument	Audio level meter
Specified Value	Less than -70 dBs *2

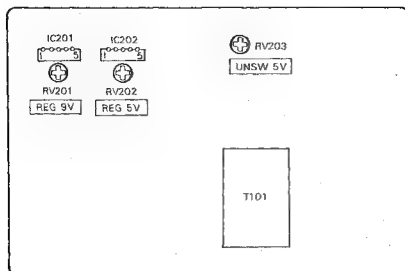
Note : When checking the player side, use a tape recorded on the recorder side.

Checking method :

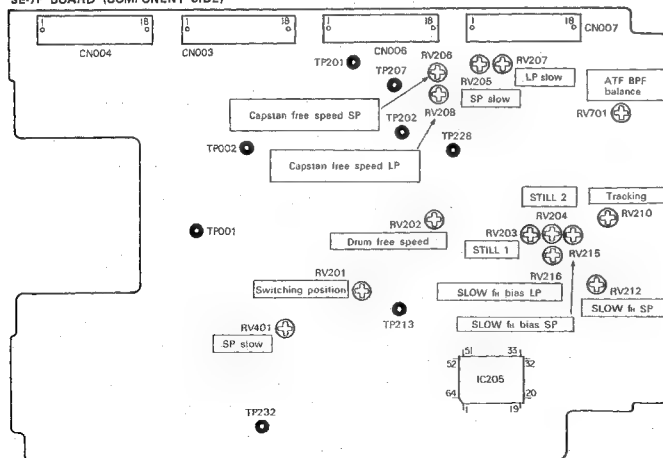
- 1) Record the signal.
- 2) Playback the recorded section.
- 3) Confirm that noise level is less than -70 dBs *2.
*2 Value during using an IHF-A listening sensitivity correction filter.

PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENT

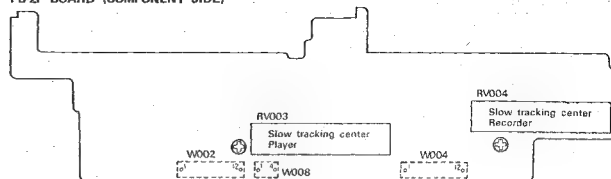
POWER BLOCK (SR-89 BOARD) (COMPONENT SIDE)



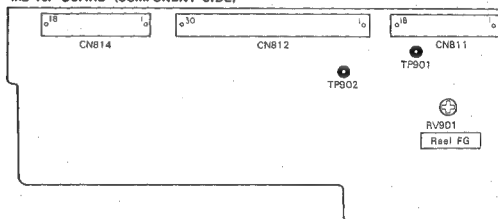
SE-7P BOARD (COMPONENT SIDE)



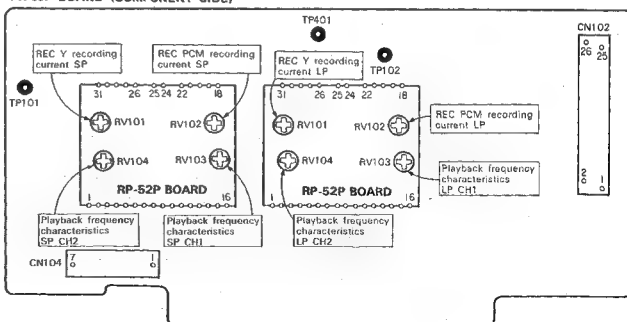
FB-2P BOARD (COMPONENT SIDE)



MD-18P BOARD (COMPONENT SIDE)

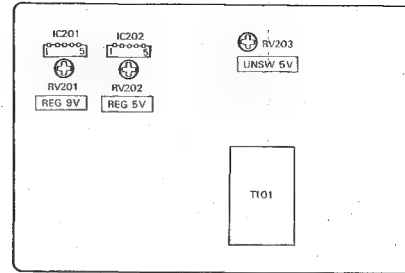


FR-30P BOARD (COMPONENT SIDE)

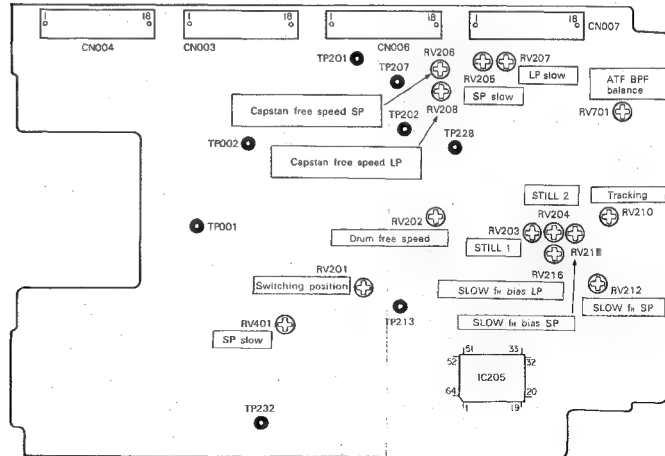


PARTS ARRANGEMENT DIAGRAM FOR ADJUSTMENT

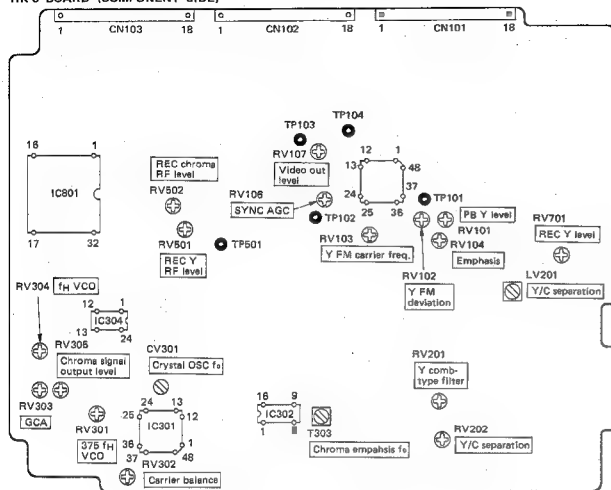
POWER BLOCK (SR-89 BOARD) (COMPONENT SIDE)



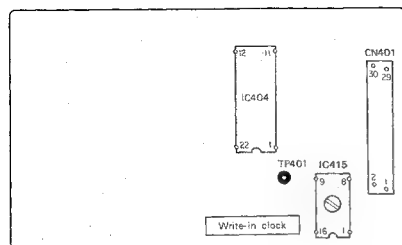
SE-7P BOARD (COMPONENT SIDE)



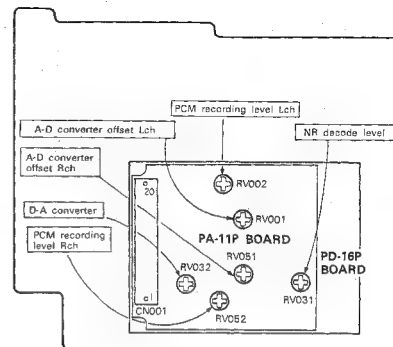
HK-3 BOARD (COMPONENT SIDE)



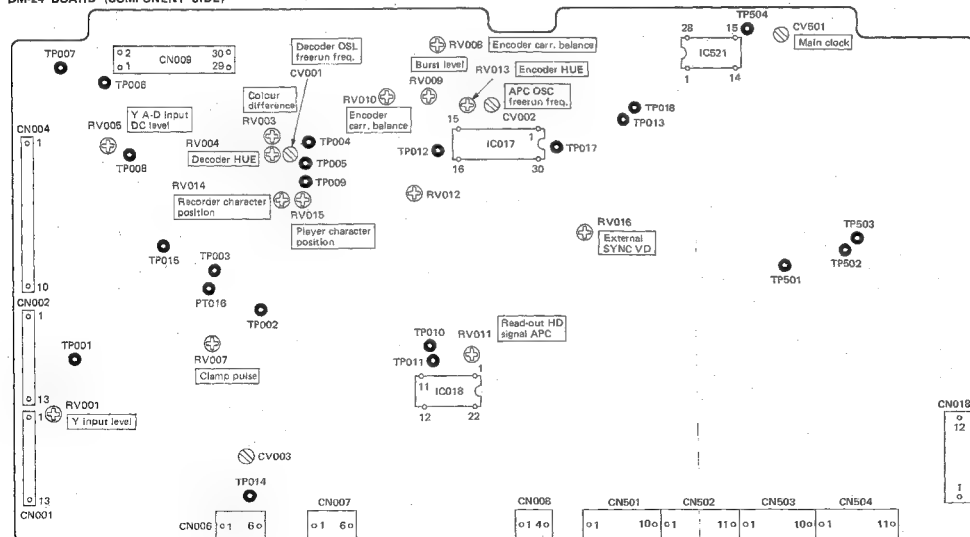
DM-15P BOARD (COMPONENT SIDE)



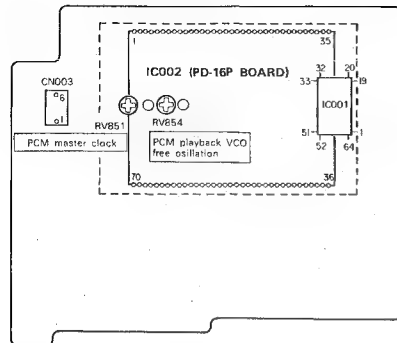
MB-9P BOARD (CONDUCTOR SIDE)



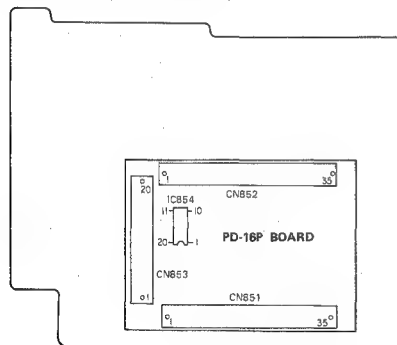
DM-24 BOARD (COMPONENT SIDE)



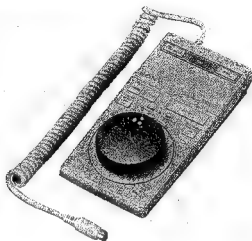
MB-9P BOARD (COMPONENT SIDE)



MB-9P BOARD (CONDUCTOR SIDE)



RM-E720



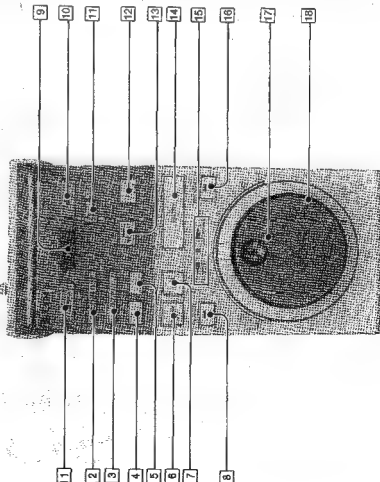
SPECIFICATIONS

Power requirements	5 V DC, supplied from the EVO-720P
Power consumption	0.75 W
Dimensions	Approx. 88 × 43 × 182 mm (w/h/d) (3½ × 1¾ × 7¼ inches) incl. projecting parts and controls
Cable length	Approx. 35 cm (13⅞ inches) when curled
Weight	Approx. 0.3 kg (10.6 oz)

EDITING CONTROLLER
SONY®

1. LOCATION AND FUNCTION OF CONTROLS

Editing Controller



1 P in P button

Press to set the unit to the program editing mode. The indicator lights in the program editing mode.

2 ONE POINT PLAY (one program play) button

In the program editing mode, press this button to prepare one of the assigned programs.

3 GO TO button

Press this button to run the tape to the IN or OUT point of the program selected with the +/− buttons. When the assigned point is located, the PLAYER is set to the freeze picture mode.

4 − button

Press this button to display the desired editing data on the monitor screen. Each time this button is pressed, the previous editing data appears.

5 + button

Press this button to display the desired editing data on the monitor screen. Each time this button is pressed, the next editing data appears: the IN point of program 1, the OUT point of program 1, the IN point of program 2, etc. in order.

6 FREEZE button

When the RECORDER INPUT SELECT switch is set to PLAYER, press to set the PLAYER to the freeze picture editing mode. "FHZ" appears on the monitor screen. Press it again to release the freeze picture editing mode. When the RECORDER INPUT SELECT switch is set to LINE, press to set the picture from external equipment as a freeze picture.

7 TITLE button

Press to set the unit to the title mode. Press it again to release the title mode.

8 PLAYER button and indicator

Press to set the unit to the PLAYER mode. The picture of the tape inserted into the PLAYER is displayed as the main picture on the screen, and can be controlled by means of the JOG dial and SHUTTLE ring. The indicator lights to indicate the PLAYER mode.

9 JOG dial

Press to start quick editing, simple insert editing or program editing. The indicator lights during pre-roll before editing, and it lights during editing.

10 END button

Press to stop quick editing, program editing or simple insert editing. When the unit is in the freeze picture mode, the RECORDER and PLAYER are set to the freeze picture mode.

11 ONE POINT CLR (one program clear) button

Press this button to clear the editing data of the program selected with the +/− buttons. New data can be set for the same program number.

12 P in P button

Press to set to picture-in-picture mode. The subsidiary picture will appear on the upper corner of the screen. Press it again to release the picture-in-picture mode.

Notes

- In picture-in-picture mode, the main or subsidiary picture will be displayed in gray if the corresponding picture is not set to the playback or freeze picture mode.
- The picture-in-picture function can also be used with the picture from the VCR connected to the RECORDER. In Jacks when the RECORDER INPUT SELECT switch is set to LINE. If no signal is input, the picture from the VCR will occur on the main or subsidiary picture. This function is not available for the external VCR. This is not a failure of the unit.

13 INSERT button and indicator

Press to start the simple insert editing. The indicator lights during simple insert editing.

14 ENTRY button

In the program editing mode, press this button to store the editing data such as the IN and OUT points, freeze picture and title in memory. For simple insert editing, press this button to store the OUT point in memory.

15 JOGSHUTTLE indicator

- : Lights when the JOG dial or SHUTTLE ring is in use.
- ▷ : Lights when the tape is transported in a forward direction.
- ◁ : Lights when the tape is transported in a reverse direction.

16 RECORDER button and indicator

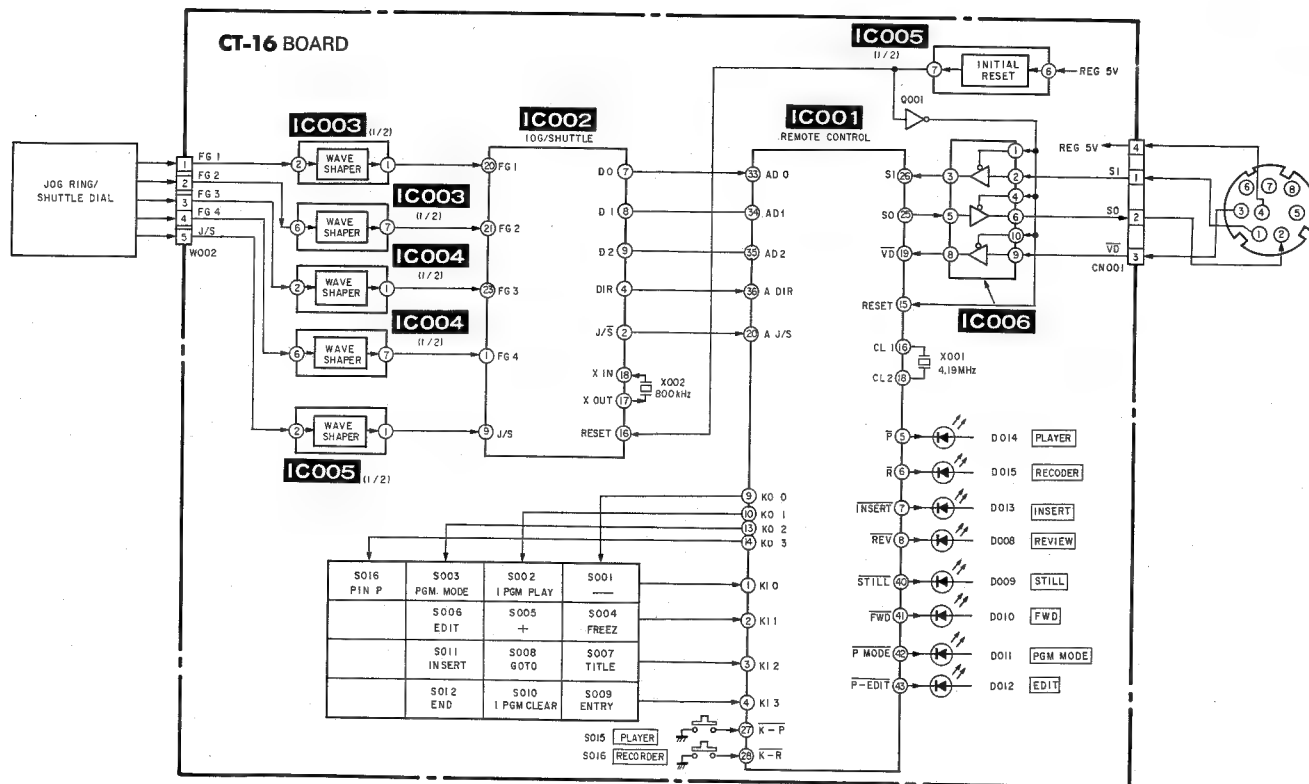
Press to set the unit to the RECORDER mode. The picture of the tape inserted into the RECORDER is displayed as the main picture on the screen, and can be controlled by means of the JOG dial and SHUTTLE ring. The indicator lights to indicate the RECORDER mode.

17 JOG dial

Turn this dial in the freeze picture mode. The playback tape speed will be according to the speed you are turning the dial: between 1/5 normal speed (frame-by-frame playback) and double speed in the forward direction, and between 1/5 normal speed and 3 times normal speed in the reverse direction.

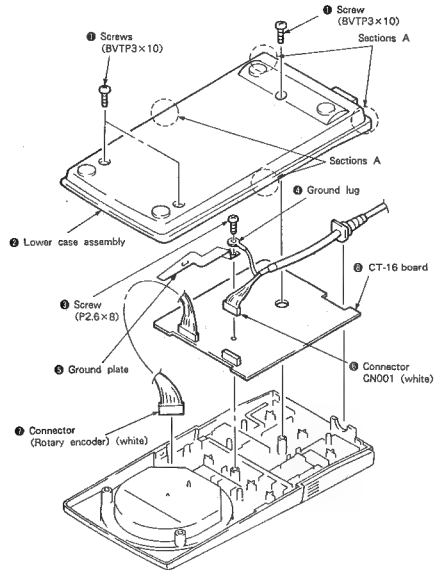
18 SHUTTLE ring

Turn and hold this ring in the freeze picture mode. The tape will be played back at a speed according to the angle at which you hold the ring: 1/5, normal, double, 9 times or 19 times normal speed in the forward direction, and 1/5, normal, double, 9 times or 19 times normal speed in the reverse direction.

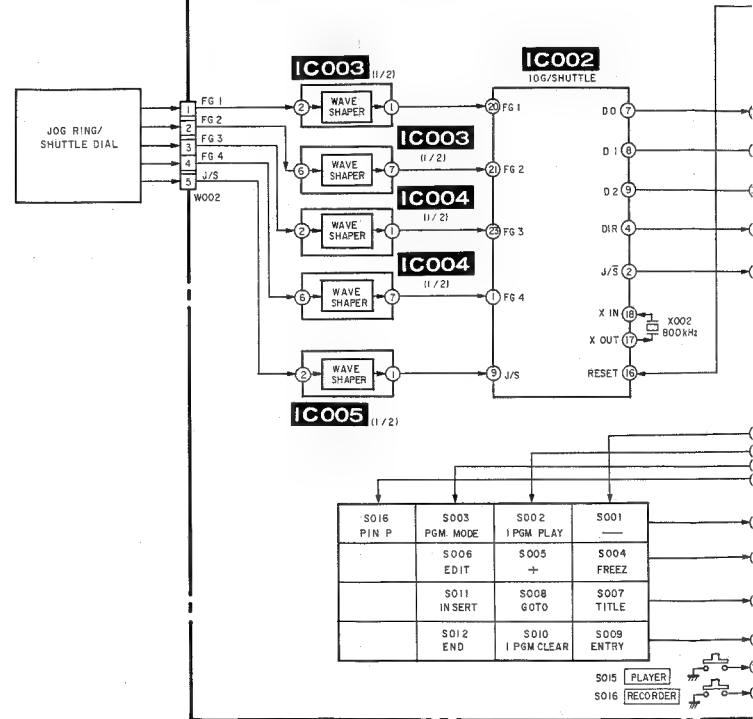


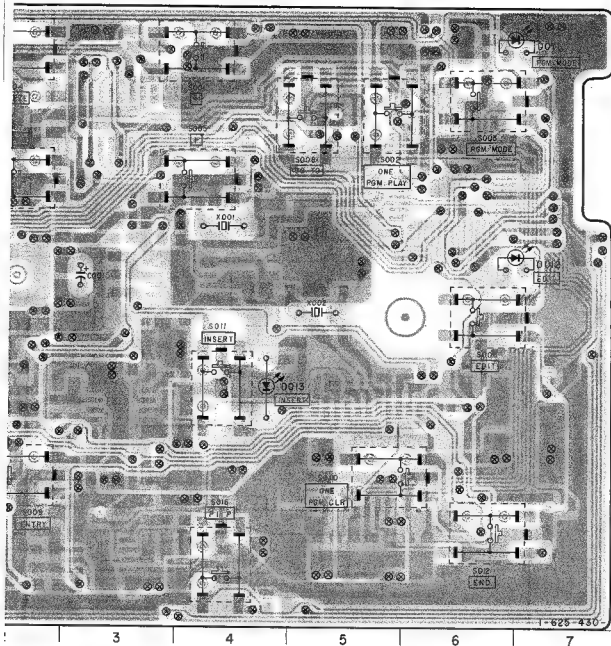
2. REMOVAL OF THE CT-16 BOARD

- 1) Remove the three screws ①.
- 2) Disengage the four claws at sections A using a minus screwdriver, and remove the lower case assembly ②.
- 3) Remove the screw ③ and remove the ground lug ④ and the ground plate ⑤.
- 4) Remove the connectors (CN001) ⑥ and ⑦, and remove the CT-16 board ⑧.

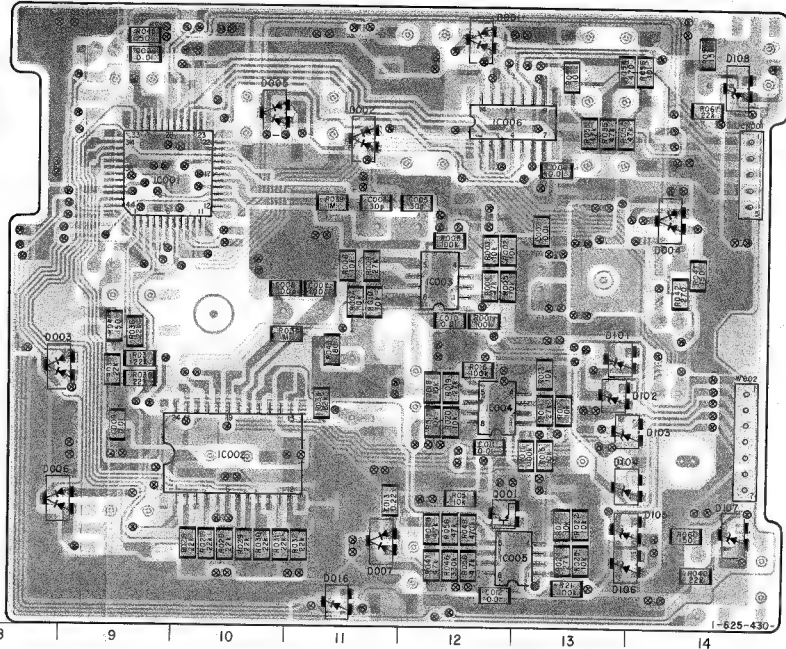


CT-16 BOARD





CT-16 BOARD (CONDUCTOR SIDE)



in the component side,
in the printed side.

after seeing.

diator with resistors.
diagram for digital transistor.

SEMICONDUCTORS

M50760-340FP



25C1815



11E52



M5231L



25C2060Q



1S2837

 μ PC3830Z

25C3832



RD6.2M-B2

 μ PD74HC125G

DTC144EK

GL-1EG102
GL-1PR102 μ PD7507MG-550-2211DQ54
15S144
DS442
ERD43-02

ZSA1020

TLR123
TLY123

CT-16 BOARD

ONG01 B-14

D001 A-12

D002 B-11

D003 B-8

D004 A-14

D005 A-10

D006 E-8

D007 E-11

D008 C-1

D009 C-1

D010 D-1

D011 A-7

D012 C-7

D013 D-4

D014 A-1

D015 E-1

D016 E-11

D017 D-13

D102 D-14

D103 A-14

D104 E-14

D105 E-14

D106 E-14

D107 E-14

D108 A-14

Q001 E-12

IC001 B-9

IC002 D-10

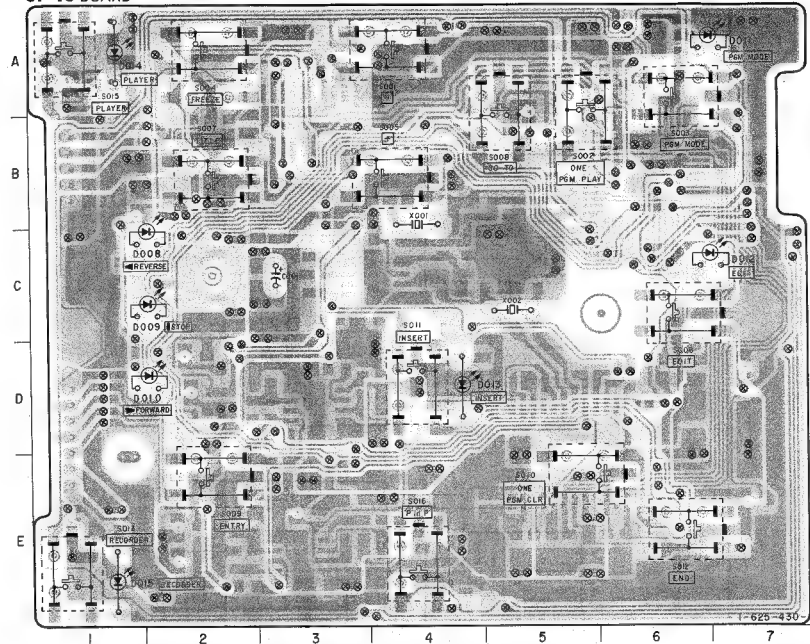
IC003 C-12

IC004 D-14

IC006 E-13

IC008 E-12

CT-16 BOARD (COMPONENT SIDE)



Notes (Printed Wiring Board)

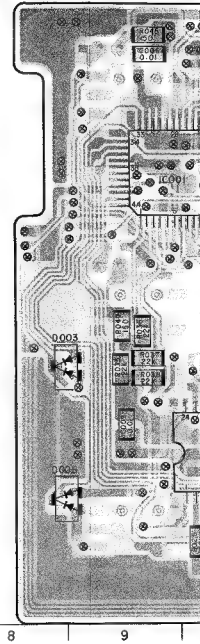
- — : Indicates a lead wire mounted on the component side.
- — : Indicates a lead wire mounted on the printed side.
- ⊙ : Through hole.
- : Pattern from the side which enables seeing.
- : Pattern of the rear side.
- Digital transistor (CT-16: Q001) transistor with resistors.

Refer to the CT-16 board schematic diagram for digital transistor.

Note

- Conductor side: Parts on the conductor side being seen from the conductor are stated.
- Component side: Parts on the component side being seen from the component are stated.

CT-16 BOARD (CONDUCTOR SIDE)

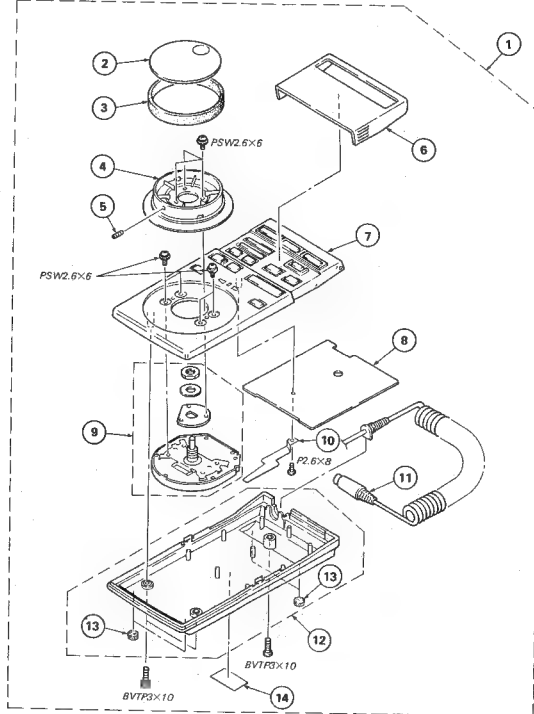


CT-16

6. EXPLODED VIEW

NOTE:

- XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "s" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.



No.	Part No.	Description	Remark	No.	Part No.	Description	Remark
1	A-7032-262-A	CONTROLLER BLOCK ASSY (E)	2-14	8	A-7070-621-A	CT-16 BOARD, COMPLETE	
2	3-724-132-01	DIAL, JOG		9	1-454-924-11	ENCODER, ROTARY	
3	3-697-994-01	COVER, S DIAL		10	3-724-170-01	PLATE, GROUND	
4	3-724-158-01	DIAL, SHUTTLE		11	1-559-726-11	CABLE (WITH DIN PLUS) BP	
5	3-701-509-00	SET SCREW, DOUBLE CUP 3X8		12	X-591-804-2	CASE ASSY, LOWER	
6	3-724-127-01	LID		13	3-570-003-00	LED	
7	X-3691-912-1	CASE ASSY, UPPER		14	X-697-981-01	LABEL, MODEL NUMBER (U/C)	

7. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "s" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS**
All resistors are in ohms
METAL: Metal-film resistor
METAL OXIDE: Metal Oxide-film resistor
F: nonflammable
- XX, -X mean standardized parts, so they may have some difference from the original one.
- SEMICONDUCTORS**
In each case, U: μ , for example:
UA: μ A, UPA: μ PA, UPB: μ PB, ..., UPC: μ PC, UPD: μ PD, ...
- CAPACITORS**
MF: μ F, PF: μ F
- COILS**
MMH: mH, UH: μ H

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark

*A-7070-621-A CT-16 BOARD, COMPLETE							

*3-689-521-01 HOLDER, LED, ROUND							

CAPACITOR							
C001	1-124-224-00	ELECT 47MF	20%	6.3V	IC		
C002	1-163-021-00	CERAMIC CHIP 0.01MF	50V	IC001	8-759-144-91	IC UP07507HG-550-22	
C003	1-163-021-00	CERAMIC CHIP 0.01MF	50V	IC002	8-759-030-20	IC MS0760-340FP	
C004	1-163-104-00	CERAMIC CHIP 30PF	5%	IC003	8-759-100-93	IC UPC39362	
C005	1-163-104-00	CERAMIC CHIP 30PF	5%	IC004	8-759-100-93	IC UPC39362	
C006	1-163-038-00	CERAMIC CHIP 0.1MF	50V	IC005	8-759-100-93	IC UPC39362	
C007	1-163-117-00	CERAMIC CHIP 100PF	5%	IC006	8-759-106-82	IC UPD74HC125G	
C008	1-163-117-00	CERAMIC CHIP 100PF	5%	TRANSISTOR			
C009	1-163-038-00	CERAMIC CHIP 0.1MF	50V	Q001	8-729-901-01	TRANSISTOR DTC144EX	
C010	1-163-021-00	CERAMIC CHIP 0.01MF	50V	RESISTOR			
C011	1-163-021-00	CERAMIC CHIP 0.01MF	50V	R001	1-216-097-00	METAL GLAZE 100K	5%
C012	1-163-021-00	CERAMIC CHIP 0.01MF	50V	R002	1-216-073-00	METAL GLAZE 10K	5%
C013	1-163-081-00	CERAMIC CHIP 0.22MF	25V	R003	1-216-073-00	METAL GLAZE 10K	5%

CONNECTOR							
CND01	*1-564-004-00	PIN, CONNECTOR 5P		R004	1-216-083-00	METAL GLAZE 27K	5%

DIODE							
D001	8-719-100-05	DIODE 1S2837 (<input type="checkbox"/> REVERSE)		R005	1-216-073-00	METAL GLAZE 10K	5%
D002	8-719-100-05	DIODE 1S2837 (<input type="checkbox"/> STOP)		R006	1-216-097-00	METAL GLAZE 100K	5%
D003	8-719-100-05	DIODE 1S2837 (<input type="checkbox"/> FORWARD)		R007	1-216-073-00	METAL GLAZE 10K	5%
D004	8-719-100-05	DIODE 1S2837 (POM LOGIC)		R008	1-216-073-00	METAL GLAZE 10K	5%
D005	8-719-100-05	DIODE 1S2837 (EDIT)		R009	1-216-083-00	METAL GLAZE 27K	5%
D006	8-719-100-05	DIODE 1S2837 (INSERT)		R010	1-216-073-00	METAL GLAZE 10K	5%
D007	8-719-100-05	DIODE 1S2837 (PLAYER)		R011	1-216-097-00	METAL GLAZE 100K	5%
D008	8-719-920-05	DIODE TL6123A (RECORDER)		R012	1-216-073-00	METAL GLAZE 10K	5%
D009	8-719-912-32	DIODE TLY123		R013	1-216-073-00	METAL GLAZE 10K	5%
D010	8-719-920-05	DIODE TL6123A		R014	1-216-083-00	METAL GLAZE 27K	5%
D011	8-719-912-32	DIODE TLY123		R015	1-216-073-00	METAL GLAZE 10K	5%
D012	8-719-912-31	DIODE TLR123		R016	1-216-097-00	METAL GLAZE 100K	5%
D013	8-719-918-65	DIODE QL-1PR102		R017	1-216-073-00	METAL GLAZE 10K	5%
D014	8-719-918-67	DIODE QL-16102		R018	1-216-073-00	METAL GLAZE 10K	5%
D015	8-719-918-65	DIODE QL-1PR102		R019	1-216-083-00	METAL GLAZE 27K	5%
D016	8-719-100-05	DIODE 1S2837		R020	1-216-073-00	METAL GLAZE 10K	5%
D017	8-719-106-08	DIODE R06.2M-B2		R021	1-216-097-00	METAL GLAZE 100K	5%
D018	8-719-106-08	DIODE R06.2M-B2		R022	1-216-073-00	METAL GLAZE 10K	5%
D019	8-719-106-08	DIODE R06.2M-B2		R023	1-216-073-00	METAL GLAZE 10K	5%
D020	8-719-106-08	DIODE R06.2M-B2		R024	1-216-083-00	METAL GLAZE 27K	5%
D021	8-719-106-08	DIODE R06.2M-B2		R025	1-216-073-00	METAL GLAZE 10K	5%
D022	8-719-106-08	DIODE R06.2M-B2		R026	1-216-081-00	METAL GLAZE 22K	5%
D023	8-719-106-08	DIODE R06.2M-B2		R027	1-216-081-00	METAL GLAZE 22K	5%
D024	8-719-106-08	DIODE R06.2M-B2		R028	1-216-081-00	METAL GLAZE 22K	5%
D025	8-719-106-08	DIODE R06.2M-B2		R029	1-216-081-00	METAL GLAZE 22K	5%
D026	8-719-106-08	DIODE R06.2M-B2		R030	1-216-081-00	METAL GLAZE 22K	5%
D027	8-719-106-08	DIODE R06.2M-B2		R031	1-216-081-00	METAL GLAZE 22K	5%
D028	8-719-106-08	DIODE R06.2M-B2		R032	1-216-081-00	METAL GLAZE 22K	5%
D029	8-719-106-08	DIODE R06.2M-B2		R033	1-216-081-00	METAL GLAZE 22K	5%
D030	8-719-106-08	DIODE R06.2M-B2		R034	1-216-121-00	METAL GLAZE 1M	5%

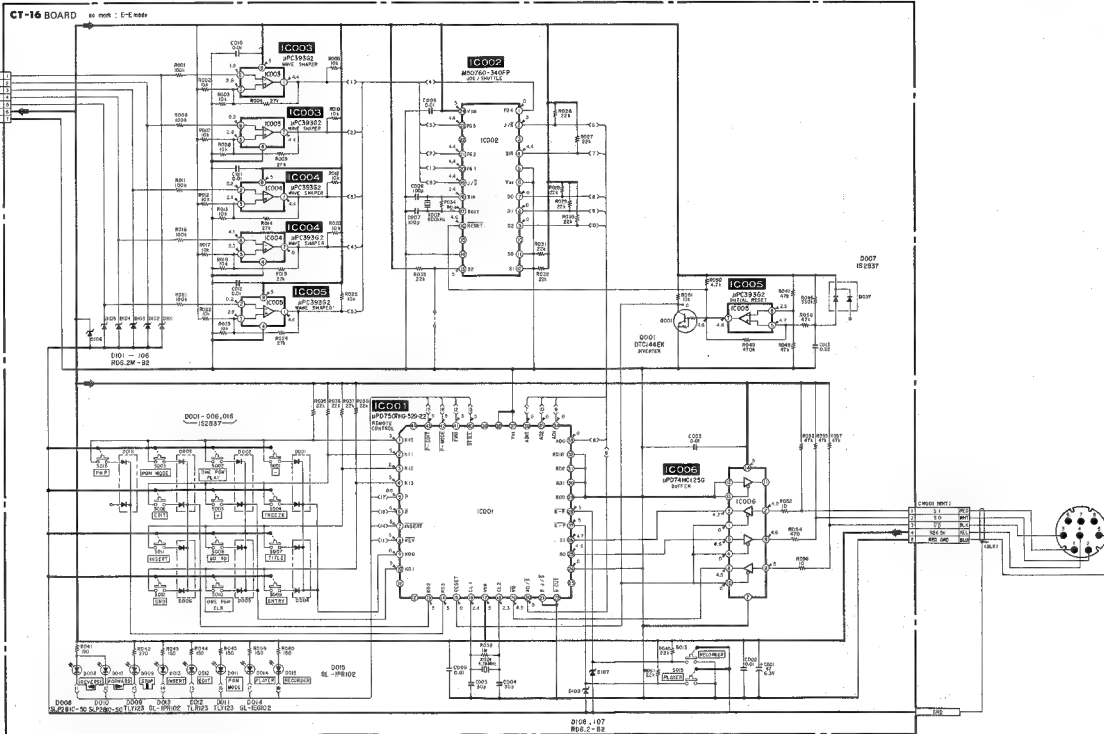
5. SCHEMATIC DIAGRAM

— Ref No. CT-16 BOARD: 10000 series —

A
B
C
D
E
F
G
HJOG RING/
SHUTTLE
DIAL

CT-16 BOARD	10000 series
1	10000
2	10000
3	10000
4	10000
5	10000
6	10000
7	10000
8	10000
9	10000
10	10000
11	10000
12	10000
13	10000
14	10000
15	10000

CT-16 BOARD	10000 series
1	10000
2	10000
3	10000
4	10000
5	10000
6	10000
7	10000
8	10000
9	10000
10	10000
11	10000
12	10000
13	10000
14	10000
15	10000



Note (Schematic Diagram)

- Caution to be exercised when replacing chip components. Do not reuse the removed components but use new components. Caution should be taken as the negative side of the tantalum capacitor is weak toward heat.
- All capacitors are in μF unless otherwise noted, pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, 1/10W unless otherwise noted. k Ω : 1000 Ω , M Ω : 1000k Ω .

- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- \square : nonflammable resistor.
- \square : fusible resistor.
- \square : panel designation.
- \square : adjustment for repair.
- \square : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10M Ω).

When indicating parts by reference number, please include the board name.

CT-16

F.No	Part No.	Description	Remark
035	1-216-081-00	METAL GLAZE 22K 5%	1/10W
036	1-216-081-00	METAL GLAZE 22K 5%	1/10W
037	1-216-081-00	METAL GLAZE 22K 5%	1/10W
038	1-216-081-00	METAL GLAZE 22K 5%	1/10W
039	1-216-121-00	METAL GLAZE 1H 5%	1/10W
040	1-216-081-00	METAL GLAZE 22K 5%	1/10W
041	1-216-029-00	METAL GLAZE 150 5%	1/10W
042	1-216-035-00	METAL GLAZE 270 5%	1/10W
043	1-216-031-00	METAL GLAZE 180 5%	1/10W
044	1-216-029-00	METAL GLAZE 150 5%	1/10W
045	1-216-029-00	METAL GLAZE 150 5%	1/10W
046	1-216-109-00	METAL GLAZE 330K 5%	1/10W
047	1-216-089-00	METAL GLAZE 47K 5%	1/10W
048	1-216-089-00	METAL GLAZE 47K 5%	1/10W
049	1-216-113-00	METAL GLAZE 470K 5%	1/10W
050	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
051	1-216-073-00	METAL GLAZE 10K 5%	1/10W
052	1-216-001-00	METAL GLAZE 10 5%	1/10W
053	1-216-089-00	METAL GLAZE 47K 5%	1/10W
054	1-216-041-00	METAL GLAZE 470 5%	1/10W
055	1-216-099-00	METAL GLAZE 47K 5%	1/10W
056	1-216-001-00	METAL GLAZE 10 5%	1/10W
057	1-216-099-00	METAL GLAZE 47K 5%	1/10W
058	1-216-089-00	METAL GLAZE 47K 5%	1/10W
059	1-216-099-00	METAL GLAZE 150 5%	1/10W
060	1-216-029-00	METAL GLAZE 150 5%	1/10W
061	1-216-081-00	METAL GLAZE 22K 5%	1/10W
SWITCH			
01	1-554-371-51	SWITCH, TACT (-)	
02	1-554-371-51	SWITCH, TACT (ONE PGM PLAY)	
03	1-554-371-51	SWITCH, TACT (PGM MODE)	
04	1-554-371-51	SWITCH, TACT (FREEZE)	
05	1-554-371-51	SWITCH, TACT (+)	
06	1-554-371-51	SWITCH, TACT (EDIT)	
07	1-554-371-51	SWITCH, TACT (TITLE)	
08	1-554-371-51	SWITCH, TACT (GO TO)	
09	1-554-371-51	SWITCH, TACT (ENTRY)	
0	1-554-371-51	SWITCH, TACT (ONE PGM CLR)	
1	1-554-371-51	SWITCH, TACT (INSERT)	
2	1-554-371-51	SWITCH, TACT (END)	
3	1-554-371-51	SWITCH, TACT (RECORDER)	
5	1-554-371-51	SWITCH, TACT (PLAYER)	
6	1-554-371-51	SWITCH, TACT (P In P)	
CERAMIC			
1	1-567-160-21	OSCILLATOR, CERAMIC (4.19MHz)	
2	1-527-965-00	OSCILLATOR, CERAMIC (800kHz)	

When indicating parts by reference number, please include the board name.

KI-720P



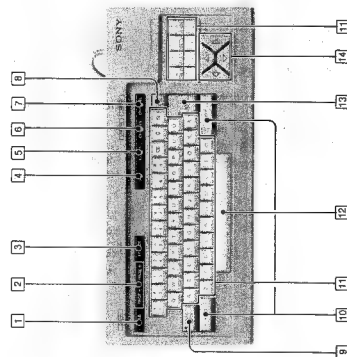
SPECIFICATIONS

Title keyboard	74 keys, N-key rollover
Keyboard	5 V DC, supplied from the EVO-720P
Power requirements	0.13 W
Power consumption	Approx. 409 × 36 × 183 mm (w/h/d)
Dimensions	(16 1/8 × 1 7/8 × 7 1/4 inches)
	incl. projecting parts and controls
	not incl. connecting cable
Cable length	Approx. 130 cm (51 1/4 inches)
Weight	Approx. 1.3 kg (2 lb 14 oz)
	incl. connecting cable

TITLE KEYBOARD
SONY

1. LOCATION AND FUNCTION OF CONTROLS

Title Keyboard



- 1 **TITLE/LEFT key**
Press this key to set the VTR to title mode. The character of the title is displayed on the monitor screen to allow the operator to check the position of the title.
To clear the title being displayed, press this key while pressing the SHIFT key.
- 2 **PAGE key**
Select the title page (1 through 30). Press the PAGE + key to display the next page and the PAGE - key to display the previous page.
- 3 **DEL key**
When creating titles for programme editing, use this key to delete the character of the title.
When creating titles for programme editing, use this key to delete the letters picture on which the title is displayed.
- 4 **ENTER key**
Select the character size.
Two sizes of characters can be used in one title.
Press the ENTER key to select the character size and the other for the characters on the second line and later.
- 5 **RECALL key**
Recall key, or transparent background.
- 6 **DATA, TITLE, DEL, DEL/DELETE, INSERT key**
Press this key to insert one space. To insert a bold line, press this key while pressing the SHIFT key.
- 7 **DATA, DEL/DELETE, DEL key**
Delete character/character deletion key.
Press this key to delete the character of the title.
To delete all characters on one line, press this key while pressing the SHIFT key.
- 8 **DEL/DELETE key**
Delete character/character deletion key.
Press this key to delete the character of the title.
To delete all characters on one line, press this key while pressing the SHIFT key.
- 9 **CAPS LOCK key**
Press to lock this key to enter capital letters when you press character keys. Press it again to unlock.

- 10 **SHIFT key**
Pressing this key pressed, press a character key to enter a character. Pressing this key while pressing a character key, it press a number or symbol key.
Press this key while pressing a character key to enter a character in the upper case.
- 11 **Character number and symbol key**
Use these keys as you would with an ordinary typewriter.
- 12 **Space bar**
Press this key to insert one space. To insert a bold line, press this key while pressing the SHIFT key.
- 13 **DEL/DELETE key**
Delete character/character deletion key.
Press this key to delete the character of the title.
To delete all characters on one line, press this key while pressing the SHIFT key.
- 14 **Cursor control keys**
Press these keys to move the cursor in the direction indicated on the keys.

2. PRINTED WIRING BOARD

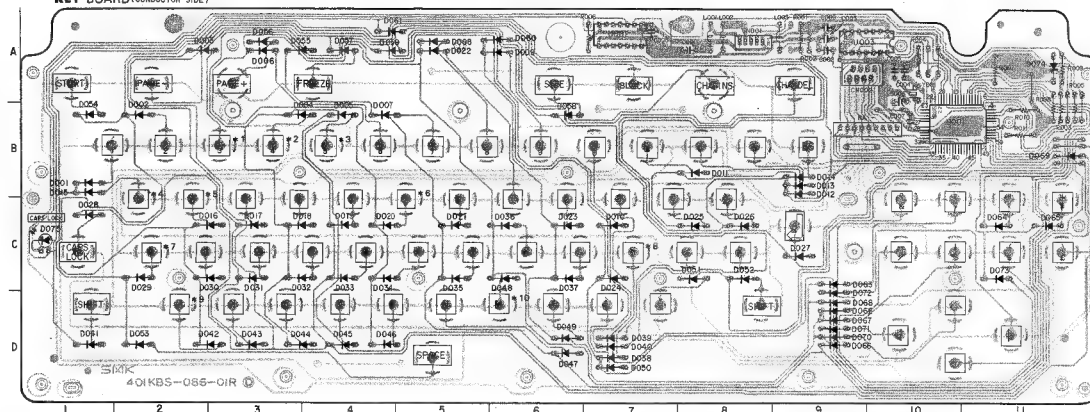
— Ref No KEYBOARD: 11000 series —

KEY BOARD

CH001	A-8
D001	B-1
D002	B-2
D003	A-2
D004	B-3
D005	B-4
D006	A-3
D007	B-4
D008	A-3
D009	A-8
D010	D-7
D011	B-8
D012	B-9
D013	B-9
D014	B-9
D015	B-1
D016	D-3
D017	D-3
D018	D-3
D019	D-4
D020	D-4
D021	D-5
D022	A-5
D023	C-5
D024	D-7
D025	C-8
D026	C-8
D027	C-8
D028	C-8
D029	D-1
D030	D-2
D031	D-3
D032	D-3
D033	D-4
D034	D-4
D035	D-5
D036	D-5
D037	C-6
D038	D-7
D039	D-7
D040	D-7
D041	D-1
D042	D-3
D043	D-3
D044	D-4
D045	D-4
D046	D-4
D047	D-8
D048	D-8

D050	D-7
D051	D-7
D052	D-8
D053	D-9
D054	B-1
D055	A-3
D056	A-3
D057	A-3
D058	B-6
D059	A-4
D060	A-4
D061	A-4
D062	D-8
D063	D-8
D064	C-11
D065	D-8
D066	D-8
D067	B-11
D068	D-8
D069	D-8
D070	D-8
D071	D-8
D072	D-8
D073	C-11
D074	A-11
FPC-CN	A-9
K028	C-1
U001	B-10
U002	A-7
U003	A-9

KEY BOARD (CONDUCTOR SIDE)



[Note] PANEL DESIGNATIONS ON THIS BOARD ARE FACTORY PRESET TYPE. DIFFERENCES ARE FOLLOWINGS:

*1:	for France	*7:	for France
*2:	for France	*8:	for France
*3:	for France	*9:	for France
*4:	for France	*10:	for West Germany
*5:	for France		
*6:	for West Germany		

Note (Printed Wiring Board)

- : Indicates a lead wire mounted on the component side.
- : Indicates a lead wire mounted on the printed side.
- ⊗ : Through hole.
- : Pattern from the side which enables using.
- : Film pattern of KEY switch side.

Note

Component side: Parts on the conductor side being seen from the component are stated.

SEMICONDUCTORS

74LS05
74LS125



HD6305V0F-PAL



182837



TLR124

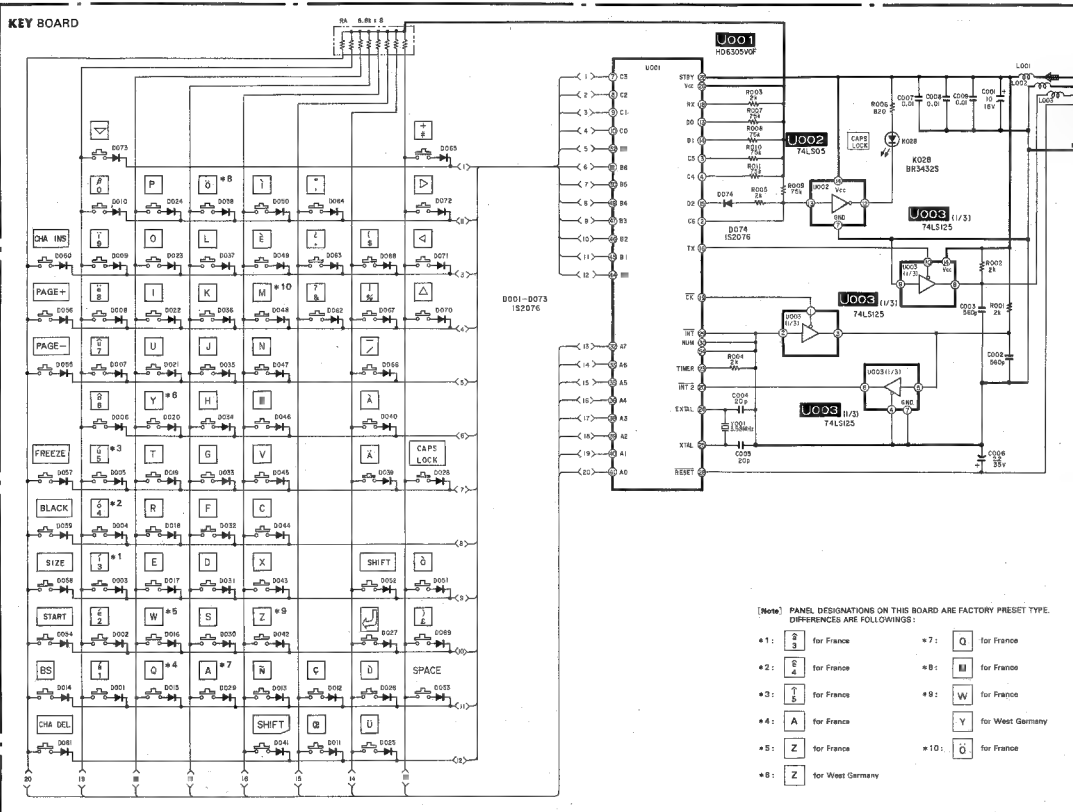


3. SCHEMATIC DIAGRAM

— Ref. No. KEYBOARD: 11000 series —

A
B
C
D
E
F
G
H
I
J

KEY BOARD



Note (Schematic Diagram)

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, $1/10\text{W}$ unless otherwise noted. $\text{k}\Omega$: 1000Ω , $\text{M}\Omega$: $1000\text{k}\Omega$.
- All variable and semi-fixed resistors have characteristics curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- : adjustment for repair.
- : B + line.
- The voltage value is a reference value between the grounding when the color bar signal is received from a color bar generator.
- All voltage are dc measured with a VOM (10M Ω)

When indicating parts by reference number, please include the board name.

[Note] PANEL DESIGNATIONS ON THIS BOARD ARE FACTORY PRESET TYPE. DIFFERENCES ARE FOLLOWINGS:

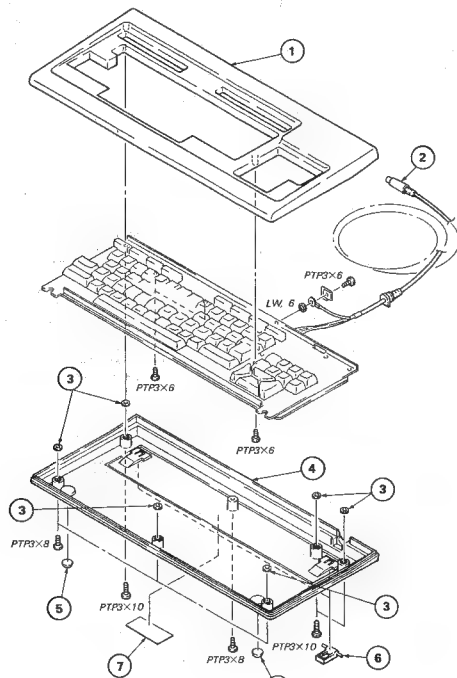
- | | |
|-----------------------|------------------|
| *1: for France | *7: for France |
| *2: for France | *8: for France |
| *3: for France | *9: for France |
| *4: for France | *10: for France |
| *5: for France | |
| *6: for West Germany | |

4. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "+" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

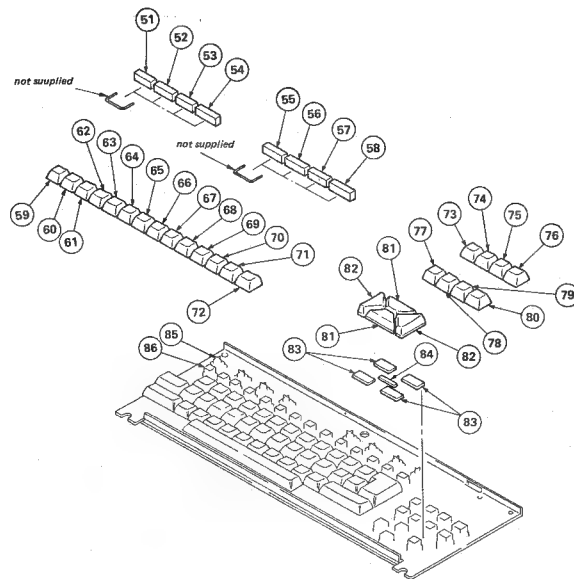
(1) CASE ASSEMBLY



Ref.No	Part No.	Description
1	9-995-144-01	CASE, UPPER
2	1-559-727-11	CORD ASSY, CONNECTOR
3	9-993-801-01	SUPPORTER
4	9-993-805-01	CASE, LOWER

Ref.No	Part No.	Description
5	9-989-306-01	FOOT, RUBBER
6	9-993-806-01	BRACKET
7	9-993-807-01	LABEL, SPECIFICATION

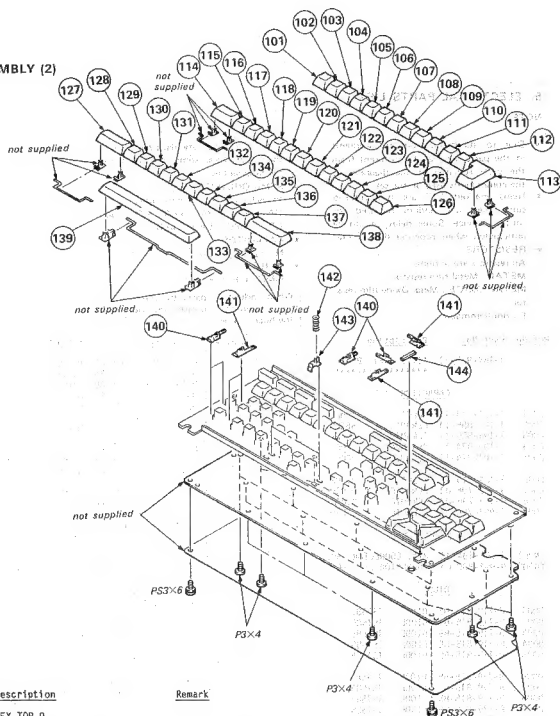
(2) KEYTOP ASSEMBLY (1)



Ref.No	Part No.	Description
51	9-995-116-01	KEY TOP TITLE
52	9-995-117-01	KEY TOP PAGE -
53	9-995-118-01	KEY TOP PAGE +
54	9-995-119-01	KEY TOP FREEZE
55	9-995-120-01	KEY TOP SIZE
56	9-995-121-01	KEY TOP BLACK
57	9-995-122-01	KEY TOP CHA INS
58	9-995-123-01	KEY TOP CHA DEL
59	9-995-063-01	KEY TOP 1
60	9-995-064-01	KEY TOP 2
61	9-995-065-01	KEY TOP 3
62	9-995-134-01	KEY TOP 3 (FOR FRANCE)
63	9-995-066-01	KEY TOP 4
64	9-995-135-01	KEY TOP 4 (FOR FRANCE)
65	9-995-067-01	KEY TOP 5
66	9-995-136-01	KEY TOP 5 (FOR FRANCE)
67	9-995-068-01	KEY TOP 6
68	9-995-069-01	KEY TOP 7
69	9-995-070-01	KEY TOP 8
70	9-995-071-01	KEY TOP 9
71	9-995-072-01	KEY TOP 0

Ref.No	Part No.	Description
69	9-995-073-01	KEY TOP CE
70	9-995-074-01	KEY TOP C
71	9-995-075-01	KEY TOP H
72	9-995-076-01	KEY TOP BS
73	9-995-124-01	KEY TOP 7/8
74	9-995-125-01	KEY TOP 1/4
75	9-995-126-01	KEY TOP +/-
76	9-995-127-01	KEY TOP +/- e
77	9-995-128-01	KEY TOP +/- f
78	9-995-129-01	KEY TOP 1/3
79	9-995-130-01	KEY TOP 1/5
80	9-995-131-01	KEY TOP 1/6
81	9-995-132-01	KEY TOP 1/7
82	9-995-133-01	KEY TOP 1/8
83	9-991-998-01	STOPPER
84	9-991-967-01	STOPPER, RUBBER
85	9-993-803-01	SWITCH, KEY
86	9-993-802-01	SWITCH, KEY

[3] KEYTOP ASSEMBLY (2)



No Part No. Description

Remark

9-995-077-01	KEY TOP Q
9-995-137-01	KEY TOP A (FOR FRANCE)
9-995-078-01	KEY TOP W
9-995-138-01	KEY TOP Z (FOR FRANCE)
9-995-079-01	KEY TOP E
9-989-080-01	KEY TOP R 995
9-995-081-01	KEY TOP T
9-995-082-01	KEY TOP Y
9-995-138-01	KEY TOP Z (FOR WEST GERMANY)
9-995-083-01	KEY TOP U
9-9-995-084-01	KEY TOP I
9-995-084-01	KEY TOP O
9-995-086-01	KEY TOP P
9-995-087-01	KEY TOP J
9-995-088-01	KEY TOP V
9-995-089-01	KEY TOP KEY ASSY
9-995-090-01	KEY TOP CAPS LOCK
9-995-091-01	KEY TOP A
9-995-139-01	KEY TOP Q (FOR FRANCE)
9-995-092-01	KEY TOP S
9-989-093-01	KEY TOP D
9-995-094-01	KEY TOP F
9-995-095-01	KEY TOP G
9-995-096-01	KEY TOP H
9-995-097-01	KEY TOP J
9-995-098-01	KEY TOP K

Ref.No	Part No.	Description	Remark
123	9-995-099-01	KEY TOP L	
124	9-995-100-01	KEY TOP 8	
	9-995-140-01	KEY TOP M (FOR FRANCE)	
125	9-995-101-01	KEY TOP A	
126	9-995-102-01	KEY TOP Z	
127	9-995-103-01	KEY TOP SHIFT (2.25)	
128	9-995-104-01	KEY TOP Z	
	9-995-141-01	KEY TOP W (FOR FRANCE)	
	9-995-143-01	KEY TOP O (FOR WEST GERMANY)	
129	9-995-105-01	KEY TOP X	
130	9-995-106-01	KEY TOP C	
131	9-995-107-01	KEY TOP V	
132	9-995-107-01	KEY TOP B	
133	9-995-108-01	KEY TOP N	
134	9-995-110-01	KEY TOP M	
	9-995-142-01	KEY TOP Y (FOR FRANCE)	
135	9-995-111-01	KEY TOP E	
136	9-995-112-01	KEY TOP I	
137	9-995-113-01	KEY TOP F	
138	9-995-114-01	KEY TOP SHIFT (2.75)	
139	9-995-115-01	KEY ASSY, SPACE	
140	*9-989-293-01	HOOK, D	
141	*9-989-292-01	HOOK, C	
142	9-989-301-01	SPRING	
143	*9-989-291-01	HOOK, A	
144	9-991-967-01	STOPPER, RUBBER	

5. ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
All resistors are in ohms
METAL : Metal-film resistor
METAL OXIDE : Metal Oxide-film resistor
F : nonflammable

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- SEMICONDUCTORS
In each case, U : μ , for example:
UA... : μ A..., UPA... : μ PA..., UPB... : μ PB...,
UPC... : μ PC..., UPD... : μ PD...
- CAPACITORS
MF : μ F, PF : μ F
- COILS
MMH : mH, UH : μ H

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark	Ref.No	Part No.	Description	Remark
	1-464-925-11	TITLE KEY BOARD *****		D031	8-719-815-85	D10DE TS1585	
		CAPACITOR		D032	8-719-815-85	D10DE TS1585	
C001	1-124-233-11	ELECT 10MF	16V	D033	8-719-815-85	D10DE TS1585	
C002	1-101-885-11	CERAMIC 560PF		D034	8-719-815-85	D10DE TS1585	
C003	1-101-885-11	CERAMIC 560PF		D035	8-719-815-85	D10DE TS1585	
C004	1-101-974-11	CERAMIC 20PF		D036	8-719-815-85	D10DE TS1585	
C005	1-101-974-11	CERAMIC 20PF		D037	8-719-815-85	D10DE TS1585	
C006	1-124-243-11	ELECT 2.2MF	35V	D038	8-719-815-85	D10DE TS1585	
C007	9-993-796-01	CERAMIC 0.01MF		D039	8-719-815-85	D10DE TS1585	
C008	9-993-796-01	CERAMIC 0.01MF		D040	8-719-815-85	D10DE TS1585	
C009	9-993-796-01	CERAMIC 0.01MF		D041	8-719-815-85	D10DE TS1585	
		CONNECTOR		D042	8-719-815-85	D10DE TS1585	
CN001	1-506-484-11	PIN, CONNECTOR 5P		D043	8-719-815-85	D10DE TS1585	
CN002	9-993-800-01	CONNECTOR FPC 8P		D044	8-719-815-85	D10DE TS1585	
		D10DE		D045	8-719-815-85	D10DE TS1585	
D001	8-719-815-85	D10DE TS1585		D046	8-719-815-85	D10DE TS1585	
D002	8-719-815-85	D10DE TS1585		D047	8-719-815-85	D10DE TS1585	
D003	8-719-815-85	D10DE TS1585		D048	8-719-815-85	D10DE TS1585	
D004	8-719-815-85	D10DE TS1585		D049	8-719-815-85	D10DE TS1585	
D005	8-719-815-85	D10DE TS1585		D050	8-719-815-85	D10DE TS1585	
D006	8-719-815-85	D10DE TS1585		D051	8-719-815-85	D10DE TS1585	
D007	8-719-815-85	D10DE TS1585		D052	8-719-815-85	D10DE TS1585	
D008	8-719-815-85	D10DE TS1585		D053	8-719-815-85	D10DE TS1585	
D009	8-719-815-85	D10DE TS1585		D054	8-719-815-85	D10DE TS1585	
D010	8-719-815-85	D10DE TS1585		D055	8-719-815-85	D10DE TS1585	
D011	8-719-815-85	D10DE TS1585		D056	8-719-815-85	D10DE TS1585	
D012	8-719-815-85	D10DE TS1585		D057	8-719-815-85	D10DE TS1585	
D013	8-719-815-85	D10DE TS1585		D058	8-719-815-85	D10DE TS1585	
D014	8-719-815-85	D10DE TS1585		D059	8-719-815-85	D10DE TS1585	
D015	8-719-815-85	D10DE TS1585		D060	8-719-815-85	D10DE TS1585	
D016	8-719-815-85	D10DE TS1585		D061	8-719-815-85	D10DE TS1585	
D017	8-719-815-85	D10DE TS1585		D062	8-719-815-85	D10DE TS1585	
D018	8-719-815-85	D10DE TS1585		D063	8-719-815-85	D10DE TS1585	
D019	8-719-815-85	D10DE TS1585		D064	8-719-815-85	D10DE TS1585	
D020	8-719-815-85	D10DE TS1585		D065	8-719-815-85	D10DE TS1585	
D021	8-719-815-85	D10DE TS1585		D066	8-719-815-85	D10DE TS1585	
D022	8-719-815-85	D10DE TS1585		D067	8-719-815-85	D10DE TS1585	
D023	8-719-815-85	D10DE TS1585		D068	8-719-815-85	D10DE TS1585	
D024	8-719-815-85	D10DE TS1585		D069	8-719-815-85	D10DE TS1585	
D025	8-719-815-85	D10DE TS1585		D070	8-719-815-85	D10DE TS1585	
D026	8-719-815-85	D10DE TS1585		D071	8-719-815-85	D10DE TS1585	
D027	8-719-815-85	D10DE TS1585		D072	8-719-815-85	D10DE TS1585	
D028	8-719-815-85	D10DE TS1585		D073	8-719-815-85	D10DE TS1585	
D029	8-719-815-85	D10DE TS1585		D074	8-719-815-85	D10DE TS1585	
D030	8-719-815-85	D10DE TS1585		D075	8-719-812-41	TLR124 CAPS LOCK	

Ref. No	Part No.	Description	Remark
<u>COIL</u>			
L001	1-410-058-21		
L002	1-410-058-21		
L003	1-410-058-21		
<u>RESISTOR</u>			
R001	1-246-480-25	CARBON 2K	1/4W
R002	1-246-480-25	CARBON 2K	1/4W
R003	1-246-480-25	CARBON 2K	1/4W
R004	1-246-480-25	CARBON 2K	1/4W
R005	1-246-480-25	CARBON 2K	1/4W
R006	1-246-471-25	CARBON 820	1/4W
R007	1-246-518-25	CARBON 75K	1/4W
R008	1-246-518-25	CARBON 75K	1/4W
R009	1-246-518-25	CARBON 75K	1/4W
R010	1-246-518-25	CARBON 75K	1/4W
R011	1-246-518-25	CARBON 75K	1/4W
<u>ALLY RESISTOR</u>			
A	9-993-797-01	ALLY RESISTOR 6.8K X 8	
<u>IC</u>			
001	9-995-197-01	IC HD6305VDF-PAL	
002	8-795-900-05	IC 74LS05	
003	8-795-901-25	IC 74LS125	
<u>CRYSTAL</u>			
001	9-093-798-01	OSCILLATOR, CRYSTAL (3.58MHz)	

When indicating parts by reference number, please include the board name.

